The Regulation of Electricity Exports

Report of an Inquiry
By a Panel of the National Energy Board
Following a Hearing
in November and December 1986

National Energy Board
June 1987

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National Energy Board

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder, and

IN THE MATTER OF an inquiry to review and report on the federal regulation of electricity export.

HEARD at Ottawa, Ontario on 24, 25, 26, 27 and 28 November 1986

HEARD at Fredericton, New Brunswick on 2 December 1986

HEARD at Vancouver, British Columbia on 9, 10 and 11 December 1986

BEFORE:

R. Priddle	Presiding Member
R.F. Brooks	Member
L.M. Thur	Member

APPEARANCES:

H.M. Kay	Alberta Power Limited
P. Makut	Bonneville Power Administration
D. Duff L.H. Hindle	British Columbia Hydro and Power Authority
O.N. Clarke A. Bigué	Churchill Falls (Labrador) Corporation Limited
R. Deane	Cominco Limited
A. Hanson D. Estey	Fraser Incorporated
P.R. Fortin G. Marchand	Hydro-Québec
W. Richards D. Case	Maine and New Brunswick Electrical Power Company, Limited
W. Burnett P. Thompson	Manitoba Hydro
W.G. Lea	Maritime Electric Company Limited
P.J. Dykeman, Q.C.	New Brunswick Electric Power Commission
H.S. Marshall	Newfoundland Light and Power Company Limited

O.N. Clarke A. Bigué	Newfoundland and Labrador Hydro
J.K. Poirier R. Young	Nova Scotia Power Corporation
E. Finn	Ontario Hydro
R. Haynes K. Wellman	Saskatchewan Power Corporation
R. Malone	TransAlta Utilities Corporation
R. Anderson	West Kootenay Power and Light Company, Limited
K. McAllister	Judicial Action
C. Sandborn R. Gathercole	Peace Valley Environmental Association
R. Miles	Sierra Club of Western Canada
M. Marc	Société pour vaincre la pollution
E. S. Bell	On his own behalf
J.M. Black	On his own behalf
Mr. X	On his own behalf
P.G. Jarman	Ministry of Energy, Mines and Petroleum Resources of British Columbia
G.D. Forrest	Deputy Minister of Municipal Affairs of Manitoba
O.N. Clark A. Bigué	Attorney General and Minister Responsible for Energy of Newfoundland
J. Pounder E. Ciemiega N. Jiwan	Ontario Ministry of Energy
J.M. Haldemann J. Falwell	Minister of Energy and Forestry of Prince Edward Island
L. Gagnall M. Rodgerson	PC Opposition Caucus of Prince Edward Island
J. Giroux J. Robitaille	Procureur général du Québec
S.K. Fraser D. Tremblay	National Energy Board

Abbreviations

Units Of Measurement

GW.h	gigawatt hour (1 million kW.h)
km	kilometre
kV	kilovolt
kW.h	kilowatt hour
MW	megawatt
MW.h	megawatt hour
mill	one tenth of a cent (expressed in Canadian funds)

Names And Expressions

"Act" or "NEB Act"	National Energy Board Act
"Alberta Power"	Alberta Power Limited
"Board" or "NEB"	National Energy Board
"B.C. Hydro" or "British Columbia Hydro"	British Columbia Hydro and Power Authority
"CAC"	The Consumers' Association of Canada
"Commission" or "Borden Commission"	The Royal Commission on Energy
"EFE Act"	Electricity and Fluids Exportation Act
"EPAFIGA"	Exportation of Power and Fluids and Importation of Gas Act
"EPC"	Energy Project Certificate (B.C.)
"ERC"	Energy Removal Certificate (B.C.)

Names And Expressions

"Government of B.C." or "B.C. Government" or "Province of B.C."	Ministry of Energy Mines and Petroleum Resources of British Columbia
"Government of Ontario" or "Ontario Government" or "Province of Ontario"	Ontario Ministry of Energy
"Government of Québec" or "Québec Government" or "Province of Québec"	Procureur général du Québec

"Maine and New New Brunswick Power"	Maine and New Brunswick Power Company Limited
"Maritime Electric" or "Maritime" or "Maritime Electric Company"	Maritime Electric Company Limited
"Minister"	Minister of Energy, Mines and Resources
"New Brunswick Power" or "N.B. Power"	New Brunswick Electric Power Commission
"Newfoundland Light and Power"	Newfoundland Light and Power Company Limited
"Northwest Conservation"	Northwest Conservation Act Coalition (U.S.A.)
"NLH"	Newfoundland and Labrador Hydro
"Nova Scotia Power" or "N.S. Power"	Nova Scotia Power Corporation
"Pacific Gas and Electric"	Pacific Gas and Electric Company (U.S.A.)
"Panel"	National Energy Board Panel
"PURC"	Public Utilities Review Commission (Saskatchewan)
"PVEA"	Peace Valley Environmental Association
"Saskatachewan Power"	Saskatchewan Power Corporation
"Sierra Club"	Sierra Club of Western Canada
"SVP"	Société pour Vaincre la Pollution
"TransAlta"	TransAlta Utilities Corporation
"West Kootenay" or "West Kootenay Power" or "West Kootenay Power and Light"	West Kootenay Power and Light Company, Limited

Glossary Of Terms

Avoided Cost of Generation	Refer to decremental generating cost.
Capability	The maximum load that a station or equipment is capable of carrying under specified conditions.
Capacity	In the electric power industry, this word has two meanings: Power, that is, the rate of delivery of energy. For example, a utility might sell 50 megawatts of capacity, i.e. of power. The maximum quantity of power that some piece of equipment is capable of carrying. For example, a generating unit might have a rated capacity of 50 megawatts.
Capacity Power	Power and associated energy provided on a day-to-day basis to supplement the generating capacity of the receiving party at times of temporary deficiency. (A classification of power transfer used in several Canadian interconnection agreements.)
Certificate	Authorization to construct and operate an international power line issued under Part III of the National Energy Board Act, following a public hearing and the approval of the Governor in Council.
Circulating Flows	See: Loop Flows
Columbia River Treaty	The Columbia River Treaty, signed at Washington D.C. on 17 January 1961, is a treaty between Canada and the United States relating to co-operative development of the water resources of the Columbia River basin with respect to hydro-electric power generation and flood control. The Treaty may be terminated by Canada or the United States after it has been in force for sixty years, upon ten years' notice.
Decremental Generating Cost	The cost saved by generating one less unit of electric energy below some previously determined base quantity.
Dedicated Plant	A generating plant whose electricity production is earmarked or committed to a specific buyer. The plant may be existing or newly constructed. The buyer is usually committed to pay for the fully allocated cost of the plant or some comparable alternative.

Dispatching	The operating direction of a power system from a central "dispatcher's office" or control centre. Dispatching includes the allocation of load to individual generating stations or units, the scheduling of power transfers to and from interconnected utilities and the switching of main transmission circuits and equipment.
Economic Dispatch	Economic dispatch is the start-up, shutdown, and allocation of load to individual generating stations or units to effect the most economical production of energy for the system as a whole.
Economy Energy	Energy sold by one power system to another to effect a saving in the cost of generation when the receiving party has adequate capability to supply the loads on its own system. For example, suppose that at a particular time the most economical generating unit that utility A had available to meet additional load on its system would cost 30 mills/kW.h to operate, but utility B had available a unit that would cost only 20 mills/kW.h. Then B could sell economy energy to A at some mutually agreed upon price between 20 and 30 mills. Both utilities would benefit from the transaction, A by getting energy more cheaply than it could generate it, and B by making a profit on the sale. See also: Split savings.
Environmental Impact	Any alteration to the environment caused by man and affecting human, animal, fish, and/or plant life. Pollution results in an adverse environmental impact because it is detrimental to human, animal and plant life.
Exemption Order	An order authorizing the construction and operation of a relatively small international power line, made under section 49 of the *National Energy Board Act*. The Board may issue it without a hearing and without reference to the Governor in Council. Such an order is limited to power lines of operating voltage not exceeding 50 kV. Higher voltage lines require a certificate.
Export Order	An order authorizing the export of electricity from Canada, made under Section 7 of the *NEB Act*, *Part VI Regulations*. Such an order may be issued by the Board without a public hearing and without reference to the Governor in Council. The maximum export that may be authorized by order is 50 megawatts of power and 250 GW.h/year of energy for a maximum term of three years. Larger amounts or longer terms require a licence.

Firm Power	Electric power intended to be available at all times during the period of the agreement for its sales.
Fuel Replacement Energy	Energy sold by one utility to another to enable the purchaser to avoid burning fuel in its own thermal generating facilities. In effect, the purchased energy, often hydro, replaces fuel, hence its name. Fuel replacement energy is often priced at a percentage of the fuel cost avoided by the purchasing utility (e.g. 75 percent).
Generation Expansion Plan	An electrical utility's plan of future additions to its generating capacity to supply the forecast increases in system load over a period of years.
Grid	A network of electric power lines and connections.
Inadvertent Interchange	In any specified period, the difference between the total net interchange of energy and the net scheduled or intentional interchange. The difference arises because of the difficulty of exactly controlling power flows between systems when there are multiple interconnections.
Incremental Generating Cost	The cost of generating one additional unit of electric energy above some previously determined base quantity. See also: Decremental Generating Cost
Interconnection Agreement	An agreement made between two power utilities to govern the operation of interconnections between their systems. Typically such an agreement defines different classes of inter-utility transfers and specifies how they shall be priced between the two companies.
Interconnected System	A system consisting of two or more individual power systems connected together by tie lines.
International Power Line	The *NEB Act* defines an international power line as "facilities constructed or operated for the purpose of transmitting power from or to a place in Canada to or from a place outside Canada". The Board normally considers an international power line as starting at the switching station in Canada nearest to the international border. For a distribution circuit, the international power line is normally considered as starting at the point nearest the border where any Canadian load is tapped off.

Interruptible Energy	Energy made available under an agreement that permits curtailment or interruption of delivery at the option of the supplier.
Inter-Utility Transfer	A transfer of electric power or energy between two or more electrical utilities. The *NEB Act, Part VI Regulations*, define five classes of transfer, namely: *Adjustment Transfer*: A transfer of electric power or energy made to adjust an energy account balance, or to compensate for electrical losses, or to compensate for services rendered, or to deliver output entitlements, or to provide upstream or downstream benefits. *Carrier Transfer*: A carrier transfer is a transfer of electric power or energy by one utility over the circuits of another. The delivery may be to a third party or back to the originating utility. *Equichange Transfer*: An interchange of equal quantities of electric power or energy within a stated period. *Sale Transfer*: A transfer of electric power and energy under a contract of sale. *Storage Transfer*: An electric energy transfer "banked" for the time being in the form of water in reservoir space of another electrical utility, in the expectation that equivalent electric energy will be returned at a later time.
Licence	A licence to export electricity from Canada, issued under Part VI of the National Energy Board Act, following a public hearing. A licence is subject to the approval of the Governor in Council.
Loop Flow	Unscheduled flows of electricity that occur whenever loop circuits are formed by multiple transmission lines. Such loop flows, by loading up some circuits, may reduce the total capacity available for the transmission of power.
Peak Demand	The maximum load consumed by a customer or a group of customers or a system in a stated period of time such as a month or a year. The value may be the maximum instantaneous load or more usually the average load over a designated short interval of time such as one hour. Normally stated in kilowatts or megawatts.

Power Pool	A power pool is a grouping of two or more interconnected electric systems planned and operated to supply power in the most reliable and economical manner for their combined load requirements.
Prebuilt Facilities	Facilities built in advance of domestic requirements to serve the export market.
Reliability Councils	The North American Electric Reliability Council (NERC) was formed by the electric utility industry in 1968 to promote the reliability of bulk power supply in the electric utility systems of North America. NERC consists of nine Regional Reliability Councils and one affiliate encompassing virtually all of the power systems in the United States and Canada.
Renewable Resources	Sources of energy which are inherently self-renewing, such as water power, solar energy, wind energy, tidal energy, and geothermal energy. Garbage and wastes burned as fuel are also considered renewable. The use of these renewable resources reduces the need to consume non-renewable fossil fuels such as oil, natural gas, or coal.
Reserve Generating Capacity	The extra generating capacity required on any power system over and above the expected peak load. Such a reserve is required mainly for two reasons. First, in case of unexpected breakdown of generating equipment. Second, in case the actual peak load is higher than forecast.
Rights-of-Way	The strip of land on which a power line is located, and on which the power company has acquired the legal right to perform construction and maintenance, to trim vegetation, and sometimes to restrict construction by other parties. The width of the right-of-way varies with the characteristics of the line, e.g., the higher the voltage, the greater the width required.
Short-term Power	Power and associated energy which one utility purchases from another for the purpose of obtaining a supply of power intended to be available at all times during the period covered by the commitment. (One of the classifications of inter-utility transactions used in many Canadian interconnection agreements.)

Skagit River Valley Capacity	The Skagit River Valley Treaty, in force from 14 December 1984, is a treaty between Canada and the United States relating to the Skagit River and Ross Lake, and the Seven Mile Reservoir on the Pend d'Oreille River with respect to the preservation of the natural environment of the Skagit Valley in British Columbia and the supply of electrical power to the City of Seattle in the United States. The Treaty may be terminated by mutual agreement, or by either party upon twelve months notice given after 1 January 2065.
Social Benefits	Benefits, whether tangible or intangible, resulting from a project. Social benefits are distinguished from private benefits in that they include all the benefits of a project, whether or not they accrue to project sponsors. Thus, the social benefits of a project would include both benefits to project sponsors, suitably adjusted where the market prices of project outputs did not fully reflect the social value and benefits of the project accruing to other Canadians.
Social Costs	Costs or damages, whether tangible or intangible, which a project causes to be imposed on a community, e.g., the environmental damages caused by air pollution from a coal-burning plant. Social costs are distinguished from private costs in that they include the costs of a project incurred by all Canadians rather than only those incurred by the project sponsors. Social costs may differ from private costs in two ways: first, market prices for project inputs or outputs may not accurately reflect their social costs (e.g. the private wage bill may overstate the social opportunity cost of workers employed by a project if they would otherwise be unemployed); and second, some social costs of a project may not be borne by project sponsors (e.g. pollution costs).
Social Discount Rate	A measure of the weighted average pre-tax rate of return to incremental capital in Canada.
Split Savings	A widely-used formula for the pricing of energy, especially economy energy sold by one utility to another, in which the total saving resulting from a sale is split equally between buyer and seller. See also: Economy Energy. In the example given there, the split-savings formula would result in a price of 25 mills/kW.h.

Surplus Energy	Energy that is surplus to the needs of its owner including load and reserve. On a power system, surplus energy or excess energy can be produced whenever the total generating capacity exceeds the total load. On systems with a high proportion of hydro-electric generation, surplus energy becomes available during periods of high stream flow such as during the spring runoff. Surplus energy is often sold on an interruptible basis. Under Section 83 of the *NEB Act*, the Board, in considering any application for a licence to export oil, gas or electricity, is required to satisfy itself that the quantity to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably forseeable requirements for use in Canada.
Transmission Line	A line used for the transmission of electric power at high voltage. Transmission lines may be either overhead or underground. Overhead conductors may be supported on steel towers or concrete or wood-pole structures. Lines of voltage less than 115 kilovolts are normally considered to be subtransmission or distribution, rather than transmission.
Wheeling	The transmission of power belonging to one utility through the circuits of another utility for delivery either to a third party or back to the originating system.

Introduction

By letter dated 2 September 1986, the Honourable Marcel Masse, Minister of Energy Mines and Resources, asked the National Energy Board, pursuant to Part II, section 22 of the *National Energy Board Act*, to review and report to him on the changes that could be made to simplify and reduce the regulation of electricity exports. The Board now licenses exports of electricity, issues export orders, issues certificates approving the construction of international power lines over which exports are made and approves the detailed routes for those facilities.

The Minister asked the Board to have particular regard to the following matters:

1. The potential to reduce or eliminate any overlap of federal and provincial regulation.

2. The appropriateness of the current method for determining whether the electricity to be exported is surplus to reasonably foreseeable Canadian requirements.

3. The appropriateness of the three price criteria used to assess proposed exports.

4. The potential to reduce the amounts of material that must be filed by applicants for licences and certificates.

5. The appropriateness of the twenty-five year limit on the duration of electricity exports.

The Minister also asked the Board to seek the views of interested parties with respect to all components of the review. Further, he requested that in drawing up its report, the Board be as specific as possible in defining the options for the government's consideration. These options would be reviewed in the context of the government's overall regulatory reform agenda.

In responding to the Minister's directions, the Board decided on 3 September 1986, as part of its overall inquiry, to hold a public hearing to obtain the views of interested parties on the issues relating to the regulation of electricity exports and international power lines. The hearing commenced in Ottawa on 24 November 1986, continued in Fredericton, New Brunswick, on 2 December 1986 and in Vancouver, British Columbia, on 9 December 1986 where it was concluded on 11 December 1986. (The Board's Hearing Order is reproduced in Appendix I.)

Some 50 parties, representing electric utilities, governments, associations and public interest groups filed written submissions and letters of comment. Some 32 interested parties participated at the public hearing where clarification and elaboration of the submissions were accomplished through the examination of submittors' witnesses by interested parties and the Board. Final written argument was received from 23 interested parties on or before 19 January 1987. All this evidentiary material together with the hearing panel's own views was used in the preparation of this report.

Chapter 1 provides a historical background of the development of the Canadian electric utility industry, of interprovincial and international electricity trade and of the evolution of federal and provincial regulation. Chapter 2 outlines an analytical framework against which the need for federal regulation can be assessed. Succeeding chapters discuss each of the issues relating to the regulation of electricity exports. Each chapter explains the issue and current regulatory practice. It then outlines the views of submittors on the issue, provides comments by the hearing panel and outlines the range of feasible options available for government consideration.

Appendix II provides a brief summary of provincial regulation of electricity exports. The views of the submittors to the hearing are individually summarized in Appendix III and Appendix IV describes the NEB procedures for determining the detailed route of an international power line.

Chapter 1
The Canadian Electricity Industry And Its Regulation

The Canadian electric utility industry has long been subject to varying degrees of regulation at both the provincial and federal levels. Over the years this regulation has tended to increase as the industry has evolved.

Before evaluating specific proposals for regulatory reform, it is useful to review first the development of the electric power industry in Canada and the regulatory framework governing it. In this chapter, Section 1.1 reviews the development of the electric power industry in Canada, focussing on the increasing importance of inter-utility electricity trade. Section 1.2 reviews the development of provincial ownership and regulation of the electric utilities, and Section 1.3 discusses the development of federal regulation of electricity exports.

1.1 Development of the Canadian Electric Power Industry

The Canadian electric power industry has grown rapidly from small hydraulic plants serving isolated loads in the early 1900s to today's vast interconnected electric power networks with total installed generating capacity in excess of 95,000 MW from a variety of generating sources. In 1986 hydro power accounted for 65 percent of total Canadian generation production, coal for 15 percent, nuclear for 15 percent and oil and gas for the remaining 5 percent. Some 92 percent of the electricity produced in Canada is now supplied by utilities which are provincial government enterprises.

With the exception of Ontario, which established international power lines in the early 1900s, the provincial transmission networks were developed in isolation. As opportunities arose, interties between neighbouring systems were established, initially along north-south lines and more recently between provinces, to gain improved reliability and cost reduction in system operations.

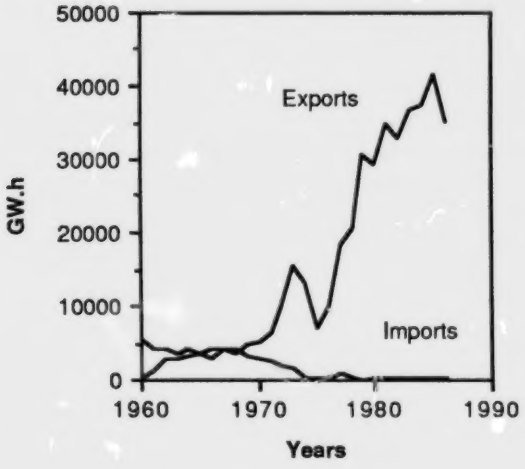
Until 1970, net electricity trade between Canada and the U.S. was roughly in balance. The rapid oil-price increases of the early 1970s resulted in the creation of a wide gap between the generation costs of hydro- and coal-based Canadian electric utilities and U.S. oil-fired utilities, particularly in the U.S. northeast and California. At the same time, because electricity demand in Canada did not grow as rapidly in the 1970s as had been expected, several Canadian utilities found themselves with large surpluses of generating capacity. This combination of circumstances provided an opportunity for increased electricity exports from Canada, to the mutual benefit of exporters and importers.

Exports grew steadily and, by 1985, Canada's net electricity exports to the U.S. had risen to a peak of 40,000 GW.h while the corresponding net export revenue amounted to $1.4 billion; in 1986, exports fell to 35,000 GW.h with a revenue of $1.1 billion. In 1986, interruptible exports accounted for 72 percent of the total. About 11 percent of electricity exports in 1986 were delivered from British Columbia to the Pacific Northwest, 18 percent from Manitoba to the Dakotas and Minnesota, 20 percent from Ontario to Michigan and New York, 33 percent from Québec to New York and New England and 18 percent from New Brunswick to New England. Electricity exports amounted to about 9 percent of Canada's total annual electricity production. Figures 1 and 2 show, respectively, the evolution of international trade in electricity and of the distribution of exports between firm and interruptible electricity.

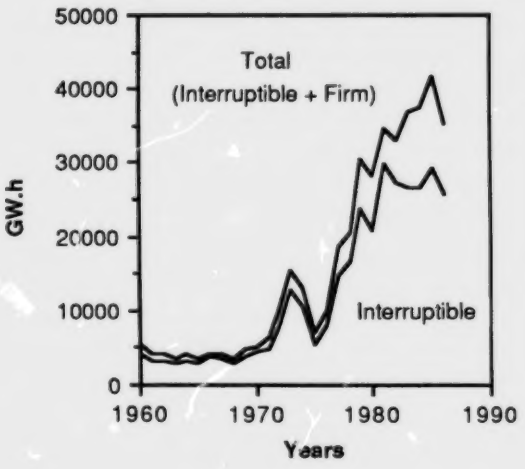
Interprovincial exchanges of electric energy increased from about 5,000 GW.h in 1960 to about 20,000 GW.h in 1986 excluding energy purchased by Québec from Churchill Falls Labrador Corporation Limited. As was the case with exports, this growth was largely due to the cost savings that fossil fuel-based utilities could realize by purchasing electricity from other Canadian utilities with low cost generation surpluses. The more rapid growth in exports reflects the natural advantages in north-south trade inherent in the proximity of Canadian generating facilities to U.S. load centres,

Canada/U.S. Electricity Trade
1960-1986

Total Exports - Imports



Interruptible, Firm & Total Exports



in the relatively larger size of U.S. markets and in the very high cost of oil-fired generation in some contiguous U.S. regions.

As Canadian power systems became interconnected with neighbouring U.S. power systems, they began to adopt the same inter-utility exchange practices that already existed in U.S. markets. The U.S. power industry, particularly in the east, consists of a large number of relatively small utilities with strongly interconnected networks. Many of these utilities realized that pooling their resources would produce security, reliability and economic benefits. This led to the formation of several power pools.

The objective of a power pool is to minimize joint generation and operation costs through the planning and the coordination of operations of the electric power systems within the pool. The planning activity may involve the sharing of the costs of new generation and transmission facilities where these facilities would result in lower unit costs to the pool's members. The minimization of total energy production costs is achieved through the practice of economic dispatch which ensures that incremental loads are met by the lowest cost generation facilities within the pool. The resulting energy exchanges enable all participating utilities to realize savings which are then shared among the pool members. In addition to these generation cost savings, more interconnections between utilities have provided important system reliability improvements and opportunities for electricity trade outside the pools.

Nature of Trade between Electric Utilities

The types of electric power and energy transactions which take place between electric utilities vary according to the short- and long-term needs of the purchaser, the availability of power or energy from a prospective supplier, the capacity of transmission interconnections between the systems, and the geographical locations of the supplier and receiver.

Inter-utility agreements form an important part of electric power system operations. These generally fall into two main types. The first, commonly referred to as interconnection agreements, provide for the interconnected operation of two or more systems and are contractual vehicles for various classes of inter-utility sales. The second type, the power pool agreement, is usually more comprehensive, providing not only for interconnected operations and transactions but also for the pooled operation of generating and sometimes other facilities. The latter type is more frequently used in the United States than in Canada.

Terminology for the various types of electric power/energy exchanges varies widely both between utilities in Canada and the United States and among the utilities within each country. The conditions of sale or exchange vary significantly according to whether a utility is primarily a thermal system using fossil (or nuclear) fuels, or a hydro system using water power to generate electricity.

In Canada and the United States, the major types of power/energy transactions between electric systems may be grouped into the following four main categories:

1. Exchanges under interconnection agreements

Energy is delivered on an hourly basis to effect fuel and other operating savings when the receiving party has adequate generation. Delivery is not firm and may be terminated with as little as thirty minutes' notice. Economy energy and other similar classes of interruptible energy fall into this category.

2. Assured energy

Energy sold in this category has a degree of firmness higher than that in (1) above but, in the instance of sales from Canada to the U.S., can be interrupted by the seller to supply Canadian firm loads.

3. Firm capacity from existing facilities

Where new construction of generating plants is not involved, agreements under this category may commit blocks of existing capacity to an export sale. Scheduling of deliveries is at the buyer's option or as contractually agreed.

4. Firm capacity from prebuilt or dedicated plants

New construction of generating plant is usually required under this category and the buyer is committed to pay for the fully allocated costs of the new plant or some comparable alternative.

Canadian utilities selling energy among themselves and to U.S. markets and power pools have generally traded at prices designed to share the benefits from trade between contracting parties. This remains the generally-accepted trading practice among interconnected utilities in Canada and in the United States.

Pricing practices to implement the shared-benefits principle have varied. Canadian utilities selling energy to U.S. power pools have negotiated prices which reflect the special circumstances of the exporter and importer. The so-called split-savings formula has most frequently been adopted for exports of economy energy. Such energy exports are priced midway between the seller's incremental generation costs and the purchasing utility's avoided generation costs. In some cases, Hydro-Québec's interruptible sales to New York, for example, export sales have been priced at 80 percent of the buyer's avoided generation costs. On the west coast, during spring run off, export prices are established by the lowest price in the U.S. market. In other circumstances export prices vary according to market conditions in the U.S. Pacific North- and South-West.

Pricing of firm exports can be based either on the cost of service, as in the case of some exports by N.B. Power, on the avoided capital costs of the purchaser's postponed facilities or of any other facilities designated for this purpose. Manitoba Hydro has negotiated such a price for a long- term export.

Finally, there may be what are sometimes called net zero exchanges where export flows from one point in Canada are balanced by import flows into Canada at another point, or where an export during one time period is balanced by an import during a later period. Normally there are no monetary exchanges associated with such transactions.

1.2 Provincial Ownership and Regulation of Electricity

Because electricity service was commonly viewed as an essential prerequisite to economic development, the extension of electricity service and the development of new generation facilities formed important components of the economic and social development policies of provincial governments. Given these objectives and the natural monopoly position of the electric utilities, most provinces eventually decided to create public provincial utilities which were mandated to provide a secure supply of electric power to provincial residents at cost. Today, all provinces, with the exceptions of Alberta and Prince Edward Island, are primarily served by provincially owned electric utilities.

By the *Constitution Act, 1867*, (Section 92A.(1)c), the provinces have exclusive jurisdiction over the

"development, conservation and management of sites and facilities in the province for the generation and production of electrical energy" and, hence, over electric generating facilities and intra-provincial transmission grids. Although the specifics vary, most provinces have well developed regulatory structures under which they oversee electricity matters within their boundaries.

Provincial governments exercise control over the electric utility industry in two areas. The first relates to rates charged to electricity consumers in the province. While some provincial utilities have the mandate to set prices, most provinces have established provincial utility boards which are responsible for reviewing and, in most cases, approving customer electricity rates. These boards are, generally, also responsible for reviewing any potential rate impacts that would occur as a result of proposed export projects. The federal government has no involvement in provincial rate setting.

The second area of provincial overview relates to the development of the electric utility industry within the province to serve in-province loads and interprovincial and international commitments. The construction of new generating facilities and transmission grids and associated environmental and rights-of-way issues are subject to provincial regulatory approval in all provinces. In addition, in most provinces potential exporters must obtain provincial cabinet approval of agreements to export electricity. The utilities' plans to export are subject to review by provincial governments but the nature of the review process differs from province to province.

The provinces' resource management interests cover both in-province concerns and electricity export matters. As a consequence they overlap with areas of NEB regulatory authority relating to licensing of electricity exports and the certificating of international power lines.

A capsule summary of provincial regulatory practices that have a bearing on the export of electricity is included in Appendix II.

1.3 Federal Regulation of Electricity Exports

Because the *Constitution Act, 1867*, grants authority over international trade and commerce to the Parliament of Canada, regulation of electricity exports is within federal jurisdiction. Federal regulation also extends to international power lines because, under the *Constitution Act, 1867*, they are federal works.

In the early 1900s, a number of new hydro-electric developments in the Niagara Peninsula were dedicated to industrial customers in the United States, some for periods of eighty-five years. There was a concern that the power from these sites would not be available to supply future domestic needs and that American industry would benefit from low-cost hydro power produced in Canada to the detriment of the competitive position of Canadian industry. These concerns led to the passage of the *Electricity and Fluids Exportation Act* in 1907 which brought electricity and oil exports and international power lines under active federal regulation.

Under the EFE Act, electricity exporters were required to obtain a licence from the Government of Canada. Section 7 of the EFE Act provided that:

> "Any such licence may provide that the quantity of power or fluid to be exported shall be limited to the surplus, after the licensee has supplied for distribution to customers for use in Canada power or fluid to the extent defined by such licence, at prices and in accordance with conditions, rules and regulations prescribed by the Governor in Council."[1]

Thus, from the outset, federal regulation was primarily intended to ensure that any exports of power would be surplus to Canadian needs, although the EFE Act also provided the Governor in Council with the authority to approve export prices.

In 1925, the government adopted a resolution under the EFE Act requiring all future licences to be renewed each year although the government respected the long-term export contracts that were already in place. In the same year, the government imposed an export duty on electricity exports. The duty was originally set at three-tenths of a mill per kilowatt hour, about ten percent of electricity export prices at the time. The duty was imposed largely to provide electricity producers with an incentive to supply the Canadian rather than the U.S. market; it remained in force until 1963.

The Governor in Council continued to require annual approval of electricity export licences until

1. Revised Statutes of Canada 1952, Volume II, page 2556.

1955. Throughout this period there was a fear that, if a hydro-electric site in Canada were dedicated to the export market, it would be effectively impossible to repatriate the electricity if it were needed at some time for Canadian needs. Indeed, President F. D. Roosevelt stated that any cancellation of an electric power export licence would be deemed by the American government to be an "unfriendly act" on the part of Canada. The explanation for this stance was largely that, in the 1920s and 1930s, electric utilities in the U.S. often relied heavily on a limited number of generation sources so that, if one source were interrupted, the utility's customers might not have adequate alternative sources of supply.

In 1955 the EFE Act was amended to include the importation and exportation of natural gas and renamed the *Exportation of Power and Fluids and Importation of Gas Act* (EPAFIGA). At that time, exports of oil and natural gas were increasing and there were concerns that these Canadian energy sources were being sold at lower prices to export customers than to Canadians. These concerns were addressed by a new regulation made in 1955. Regulation 9 states that:

> "The price charged by any licensee for any electricity, petroleum or natural gas exported by him shall not be lower than the price at which electricity, petroleum or natural gas, respectively, is supplied by him or by his supplier in similar quantities and under similar conditions of sale for consumption in Canada."[1]

Although this regulation was adopted in response to conditions in the oil and gas industry, it clearly intended that electricity suppliers not charge lower prices to export customers than to similar domestic customers.

In summary, prior to the establishment of the NEB, federal regulation of electricity exports was largely intended to ensure that export commitments would not result in the alienation of hydro-electric resources from Canadians or, in other words, to ensure that power exports would be surplus to Canadian needs. The 1955 changes to the regulations provided a guideline for export price regulation but, in the case of electricity, this was not the central focus of regulatory activities at that time.

1.3.1 Formation of the NEB

The construction of Interprovincial's oil pipeline in 1949-51 and of TransCanada's gas pipeline between 1956 and 1958 enabled Alberta to sell its oil and gas for the first time in both U.S. and central Canadian markets. The development of this continental energy trade was seen as an event of national significance and the government of the day appointed a royal commission to advise it, inter alia, on policies which would best serve the national public interest in relation to the export of energy from Canada. As part of its terms of reference, the Royal Commission on Energy (Henry Borden, Chairman) was directed to make recommendations on the functions that a national energy board might fulfill.

The Commission, in its first report in October 1958, recommended the formation of a national energy board that would, among other things, be responsible for licensing the exportation of petroleum, natural gas and electric power from Canada. In commenting on the rationale behind its recommendations, the Commission noted the importance of energy to a modern industrial nation and argued that its significance warranted regulation by a separate board whose responsibilities would be confined to energy matters. For example, with respect to the price regulations introduced in 1955 under the EPAFIGA, the Commission made the following comments:

> "While the Commission believes it understands the result which Regulation 9 was designed to accomplish, nevertheless we have found it most difficult and, indeed, almost impossible to interpret, ... The Commission believes that if a National Energy Board enquires into the terms and conditions of each proposed export contract, satisfies itself that the terms are fair and reasonable and in the public interest, and discharges the other responsibilities which the Commission is recommending should be placed upon it, the objectives which the Commission assumes were envisaged by Regulation 9 will be achieved"[2]

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1. Statutory Orders and Regulations of Canada, 1955 Consolidation, Vol. 2, section (II), p. 1037

2. Royal Commission on Energy, First Report, 1958 pages I-19, I-20.

Accordingly, the Commission recommended that regulation 9 under the EPAFIGA be rescinded and that a national energy board be charged with, *inter alia*, the responsibility for determining how best to enforce the intent of the regulation. The government acted on the Commission's recommendations and, in May of 1959, tabled the *National Energy Board Act* (the Act, the *NEB Act*). The section most relevant to the present inquiry is Section 83:

> "Upon an application for a licence the Board shall have regard to all considerations that appear to it to be relevant and, without limiting the generality of the foregoing, the Board shall satisfy itself that
>
> ***(a)*** the quantity of gas or power exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada...; and
>
> ***(b)*** the price to be charged by an applicant for power exported by him is just and reasonable in relation to the public interest."

The government's attention at the time was focussed on gas, rather than on oil or electricity. For example, with respect to subsection 83.(a), the then Minister of Trade and Commerce, the Honourable Gordon Churchill, spoke at length in the House of Commons about the need to ensure that natural gas exports would be surplus to Canadian needs. In commenting on electricity exports, his remarks were more limited:

> "As regards the exportation of electric power and gas, the key principle will be that quantities proposed to be exported must be surplus to present and reasonably foreseeable Canadian requirements. In the case of electricity, it has been the policy in the past to grant only annual licences for export, so as to prevent permanent alienation of power. This remains our general policy although some exceptions may be made in very special circumstances where the national interest would not be prejudiced by a longer-term export."[1]

Thus, with respect to electricity, subsection 83.(a) represented a continuation of earlier regulation intended to ensure that commitments to the export market would not result in the alienation of hydro-electric resources from Canadians.

The language used in section 83 is very general. With respect to subsection 83.(a), there is no definition in the Act of "reasonably foreseeable requirements" and, with respect to subsection 83.(b), there is no interpretation in the Act of the "public interest". In his remarks during parliamentary debate on the *NEB Act*, Mr. Churchill indicated that the wording of the Act was intentionally general:

> "... it is hoped that the board, through its careful consideration of all these problems, will end up with formulas which will be just and reasonable and that the interests of Canadian consumers will be protected ... It is difficult to spell out things like that in legislation but a board, with all the facts before it, and with the public interest in mind, will be able to determine for us, in the Canadian interest, what is just and reasonable. We have deliberately left this flexible ... "[2]

Thus, the government essentially adopted the recommendations of the Borden Commission with respect to letting the NEB determine how best to regulate the export of oil, gas and power from Canada.

Although the government decided to leave the details of implementation of the Act to the Board, the intent of the legislation was clearly expressed by the then Prime Minister, the Right Honourable John Diefenbaker, in his comments during parliamentary debate:

> "As to the price to be charged for gas and power, it must be just and reasonable in relation to the public interest. With the implementation of this legislation, no longer will there be any suspicion that the Canadian consumer is being forced to subsidize the foreign markets or that Canadian industries will be asked to pay higher prices for their energy than those paid by foreign industries using Canadian energy ... the bill protects not only the industrial future of Canada but the producer and the consumer. It assures a maximum advantage from the available production of Canadian gas and power, it being available, as far as gas is concerned, for export when surplus

1. House of Commons Reports May 18, 1959, page 3768.
2. House of Commons Reports May 26, 1959, page 4207.

> to the needs of the Canadian economy in this and foreseeable generations in order to ensure for Canadians an adequate supply of the natural resource sources (sic) which are the heritage of this country ..."[1]

Thus, the rationale behind Section 83.(b) appears to have been that, if Canadian energy were to be sold to export customers at prices lower than those at which it were sold to Canadians, it would undermine the competitive position of Canadian industry vis-à-vis its American competitors and be unfair to Canadian consumers.

In addition to its responsibilities with respect to surplus and export prices, the Board was charged with the responsibility of certificating international power lines. There was little discussion in Parliament as to why the Board should be given this responsibility. In the years preceding the proclamation of the *NEB Act*, province-wide electricity grids had not yet been developed nor had provincial regulation of electricity generation, transmission and distribution. It may have been thought reasonable that the NEB be made responsible for certificating the construction and operation of international power lines since such facilities were federal works under the constitutional division of powers.

Finally, the *NEB Act* extended the maximum export licence period from one to twenty-five years, although it was anticipated that long-term licences for electrical power would be granted only in exceptional circumstances.

In summary, the NEB was created largely in response to concerns arising from increased interprovincial trade in gas and increased energy exports from Canada. The primary concerns of the government of the day, with respect to exports, appear to have been that quantities of exported energy be surplus to Canadian needs and that energy not be exported at prices lower than those charged to Canadians. Further, the government recognized the difficulties inherent in ensuring that these principles be observed in practice and charged the NEB with the responsibility of fulfilling the intent of the Act, as determined by the Board itself.

The Board's current regulatory responsibilities with respect to electric power are:

(i) The Issuance of Export Licences and Orders (Section 82.(1) of the Act)

> To the end that proposed exports be in the national public interest, the Board is empowered by the *NEB Act*, after taking into account all considerations that appears to it to be relevant, to authorize for periods not longer than twenty-five years, electricity exports which the Board is satisfied:
>
> - would not exceed the surplus remaining after due allowance is made for reasonably foreseeable Canadian requirements, and
> - would be made at a price which is just and reasonable in the public interest.

(ii) The Certification of International Power Lines (Section 44 of the Act)

> To the end that construction and operation of an international power line be in the national public interest, the Board is empowered by the NEB Act, after taking into account all relevant considerations, to authorize the construction and operation of international power lines which the Board is satisfied are and will be required by the present and future public convenience and necessity. The Board is also empowered to approve the detailed route of an international power line.

The *NEB Act* was amended in 1983 to allow the Governor in Council to designate any facility to be constructed and operated for the purpose of transmitting power from a place in a province to a place in Canada outside that province (Section 90.1) as a facility to which certain provisions of the *NEB Act* apply. To date this section of the Act has not been used.

1.3.2 The Statement of National Power Policy

In 1962, at the request of the government, the NEB carried out a number of studies on the development of hydro-electric power in Canada. In October 1963, the then Minister of Trade and Commerce, the Honourable Mitchell Sharp, released a *Statement of National Power Policy*. This statement contained two essential concepts:

> "first, encouraging development of large low-cost power sources and the distribution of the benefits thereof as widely as possible through interconnection between power

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1. House of Commons Reports May 26, 1959, pages 4025 and 4026.

systems within Canada; second, encouraging power exports and interconnections between Canadian and United States power systems where such induce early development of Canadian power resources."

The Statement went on to say that:

> "The Government also believes that it would be in the national interest, in suitable cases, to license the export of large blocks of firm power to United States utilities to permit the development of large-scale remote hydro or other power projects which would not be viable unless supported by the export for long periods of a significant proportion of the power generated ... The provisions of the *National Energy Board Act* would, of course, apply to any case of this nature, as to any export of power."[1]

This statement, in supporting longer-term firm exports in "suitable cases", represented a significant departure from the long-standing policy of ensuring that hydro resources not be dedicated to the export market. The shift in policy was largely a recognition of the changing realities in the North American electric power market. It was recognized that electrical utilities no longer relied on one or two major generating sources for their electricity supply. Thus, unlike in the past, it would be possible for Canada to gradually "repatriate" a firm export without unduly endangering a purchasing U.S. utility's security of supply. Further, with the technological advancements of long-distance high-voltage transmission, the development of previously uneconomic remote hydro sites became possible. It was recognized that if these sites were to be economically developed, some portion of the output might have to be dedicated to the export market for an initial period of time.

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1. Statement of National Power Policy by Honorable Mitchell Sharp, Minister of Trade and Commerce, page 3, October 8,

Chapter 2
Why Regulate Electricity Exports At The Federal Level?

Energy has received special regulatory attention from provincial and federal governments for many years. As outlined in Chapter 1, federal regulation as it relates to exports of natural gas and electricity has focussed primarily on ensuring that export quantities are surplus to Canadian needs and that export prices are in the national public interest.

There are political reasons for regulation, such as meeting certain security and equity concerns which the market may not always be able to do on its own. These factors were noted in Chapter 1 and are discussed in the relevant sections of succeeding chapters.

This chapter discusses the economic rationale for regulation.

Unlike natural gas, electricity is not an easily-exhaustible natural resource. It is manufactured using fossil fuels, falling water, or nuclear fuels. Moreover, while natural gas tends to be concentrated geographically - making some provinces totally reliant on purchases - electricity can be produced anywhere. Each province can, at a price, ensure that its own demand will be satisfied, although some areas are more richly endowed than others with the primary energy resources from which to produce electricity.

Given that most manufactured products are not subject to export price and volume regulation, two questions arise:

- Does the electricity industry warrant special regulatory treatment?

- If there are legitimate reasons for electricity regulation, why is there a need for federal involvement, given that electric utilities are regulated provincially?

The primary reason for regulation of economic activity is that the interest of investors in an enterprise may diverge from the public interest. There are three major causes why such divergence may arise: the presence of monopoly or market power; the imposition of external or indirect costs; and the existence of costs on future generations.

(i) Monopoly Power

One premise that underlies the regulation of certain industries is that the public interest is best served when prices approximate those that would occur under competitive conditions. At these prices a larger quantity would be produced at a lower average cost than under monopolistic conditions. Further, because in competitive conditions market prices reflect the costs of supplying goods or services, an efficient allocation of resources occurs. Competition is also considered to be desirable because no customer can be discriminated against; all customers have the opportunity to buy the same goods or services at the same prices.

In reality very few markets behave in a purely competitive manner. Nonetheless, most markets are considered to operate competitively enough that direct government regulation would not improve economic efficiency.

In some industries, such as telephone service, natural gas pipelines, and electric utilities, there are economies of large-scale production and distribution. In such industries a single large producer can supply the service at a lower cost than could several smaller competing firms. Given that such natural monopolies are not subject to the discipline of competition, the potential exists for the exercise of market power. This could take two forms.

- First, the firm with market power could raise prices to levels well above the costs of supply, or engage in price discrimination between customers. Most of the output of electric utilities is consumed in the province of production so that associated rate regulation is a provincial responsibility. There may, however, also be a role for federal regulation because a provin-

cial utility may attempt to discriminate in price between export and inter-provincial markets.

- Second, a firm with control over an intra-provincial transmission system, strategically located in relation to potential export markets, may thereby prevent a Canadian potential competitor from having access to such markets. Federal regulation may be required so that such transmission monopolies are not used to prevent competition for export markets and associated development of generation facilities in Canada.

(ii) Indirect Costs

Regulation may also be justified in cases where a project could impose costs not borne by the investors but by others. Any environmental damage that may be associated with a project is the most obvious example of an indirect cost. The existence of substantial indirect costs may render a project economically undesirable from the national public interest perspective once all costs are factored in, even though it is profitable from the perspective of the investors involved. For example, a hydro project may require that a large area of land be flooded. Governments may reasonably require sponsors to demonstrate that all such associated costs would be recovered by their project.

While provincial regulators would likely take into consideration indirect costs incurred within their respective provinces, they may not take into account costs that would be imposed outside the exporting province. For example, pollution arising from coal-generated electricity could impose costs on Canadians beyond the boundaries of the exporting province. Also, the fact that provincial utilities are exempt from paying income tax may result in another type of externality with extra-provincial implications if the benefits of this were passed through to export customers. National regulation may be required, therefore, where external costs are incurred beyond the borders of the exporting utility's province.

(iii) Costs on Future Generations

Regulation may also be warranted in cases where exploitation of a resource in the short-run would cause future generations to pay higher prices than otherwise (user costs), and where there is a potential divergence between the interests of the utility and those of the public. This divergence would occur if the utility did not provide for these longer-term cost implications in its current development programs.

Unlike many manufactured products, most Canadian electricity production may be subject to increasing costs. Utilities generally develop their more favourable hydro sites first. Thus, if any but the costliest sites were developed to service the export market, the selling utility would have to develop a more expensive hydro site to service Canadian demand earlier than without exports. This means that, because of exports, Canadians would pay more sooner for their electricity. Similarly, nuclear safety and siting is expected to become increasingly costly over time, so that more rapid development in the short-run may mean higher prices for Canadians sooner than otherwise. This is a provincial concern for in-province needs, but a federal concern in respect of recovering user costs on export contracts. This consideration is relevant primarily to long-term firm capacity exports. It does not apply to short-term interruptible trade from existing facilities.

For the reasons previously outlined, it can be concluded that some form of regulation of the electric utility industry may be justified. Moreover, federal export regulation of that industry may also be warranted because, in some cases, there can be a divergence between the provincial interest, as legitimately perceived from the provincial perspective, and the national interest.

In the following chapters the federal role in regulating electricity exports is analyzed in the context of the rationale for regulation discussed above.

Chapter 3
Surplus Determination

Section 83 of the *National Energy Board Act* defines the Board's mandate in the matter of surplus as follows:

> "...on an application for a licence, the Board shall have regard to all considerations that appear to it to be relevant and, without limiting the generality of the foregoing, the Board shall
>
> *(a)* satisfy itself that the quantity of...power to be exported shall not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada..."

As discussed in Chapter 1, this requirement reflects a long-standing federal government policy that electricity supplies to Canadians be assured prior to allowing exports.

Over time, the Board has developed two basic procedures to fulfill its mandate under Section 83 of the Act:

1. *The "surplus calculation"*. In this procedure a surplus calculation is made to determine the maximum power and energy available for export. Regulations under Part VI of the Act require that a utility proposing to export electricity submit details of the planned expansion of its generating capacity, the capability of its plants to produce energy, its forecasts of peak load and energy demand and of the requirement for reserve capacity on its system. From these data, coupled with information, either from the applicant or intervening interested parties, on the potential needs of economically accessible utilities outside the exporting province, the Board verifies whether the proposed export can be supplied from the available forecast surplus generating capacity.

2. *The "offer mechanism"*. In this procedure a utility proposing to export electricity first offers this electricity under similar terms and conditions, including price, to directly interconnected and other economically-accessible Canadian utilities. With the offer mechanism, the requirements of interconnected Canadian utilities are protected, but only to the extent that they are willing to accept terms and conditions, including price, similar to those for the proposed export sale.

In its early years, the Board's primary concern was to ensure that proposed exports were surplus to provincial requirements. There were two main reasons for this. First, in-province growth in electricity was rapid and there was a concern that export commitments could adversely affect the supply of in-province loads. Second, interconnections between adjacent utilities in the different provinces were much less extensive than they are today, accordingly the potential for extra-provincial sales was small and usually easily determined.

In more recent years, the Board's focus has progressively shifted to ensuring that prospective out-of-province Canadian requirements are considered prior to exporting. This is because an increased regulatory presence at the provincial level has lessened the need for the Board to concern itself with the protection of in-province requirements and because interprovincial transmission connections have proliferated making prospective out-of-province Canadian sales more practical than in the past.

3.1 Views of Submittors

Views on the Board's surplus procedures focussed primarily on whether the Board should continue to concern itself with both the in-province requirements of the exporting utility and the needs of interconnected utilities in neighbouring provinces. This often translated into questions of:

- whether the Board should continue to do detailed surplus calculations (and thereby verify work being done at the utility and sometimes at the provincial level);or

- whether the Board should limit its role to ensuring that the availability of any electricity, surplus to the exporting province's requirements, was known and the surplus available to interconnected utilities in neighbouring provinces prior to being licensed for export.

Several submittors went a step further in arguing that there is no need for the Board to be concerned with surplus at all. In addressing these issues, submittors often distinguished between the need for surplus procedures for firm exports and for interruptible exports.

Surplus Calculations

In respect of firm exports a number of utilities including Maritime Electric Company, Ontario Hydro, TransAlta and West Kootenay Power and Light supported the continuation of detailed surplus calculations by the Board to ensure firm electricity proposed to be exported would be surplus to the requirements of the exporting utility's province as well as to the needs of interconnected utilities in neighbouring provinces. In this context, Ontario Hydro maintained that the *Statement of National Power Policy*, which put a priority on developing Canadian electricity resources for Canadian interests prior to exporting, is still appropriate and that the Board properly has a mandate to determine that proposed exports are surplus to all Canadian requirements prior to approving exports. It also suggested that comprehensive surplus calculations by the Board provide some reassurance to U.S. customers that exports which are approved by the Government of Canada will not be curtailed in the future. Pacific Gas and Electric, a major California utility, also thought that surplus calculations should be undertaken by the Board, but only for firm exports which would exceed one year.

Other utilities, including B.C. Hydro, Hydro-Québec, Manitoba Hydro and Saskatchewan Power Corporation argued that they are required by legislation to maintain an adequate supply for their in-province consumers and, therefore, that detailed surplus calculations by the Board are redundant. Saskatchewan Power Corporation maintained that, at the very least, an exporting utility should be able to declare temporary surpluses and to obtain Board approval without a public hearing for firm exports of up to five years. Manitoba Hydro argued that, if the Board were to continue to do surplus calculations for the province of Manitoba, then it should use Manitoba Hydro's assumptions for the calculations and not its own.

N.B. Power also pointed out that it has a legislative mandate to supply its in-province requirements. However, it was concerned about possible inconsistencies among provincial approaches to surplus calculations and suggested that a uniform surplus determination methodology be established and adhered to by Canada and each of the provinces. In its view, such a methodology would ensure consistent treatment for all Canadians.

Hydro-Québec criticized the Board's surplus determination test on the grounds that the electricity which will be surplus to future in-province needs is a function of discretionary investment. Thus, any calculation of surplus undertaken when evaluating a proposed export would be of little value, since the exporting utility could and would subsequently change its investment plans as required to ensure an adequate supply to its own customers.

The utilities' views varied widely on the appropriate treatment of dedicated plants in surplus calculations. B.C. Hydro suggested that long-range planning for the period of sale should show that native load can be supplied without the dedicated plant. N.S. Power, Maine & New Brunswick Power and Maritime Electric thought that a dedicated plant should not be considered in a utility's surplus calculation.

Regarding *interruptible exports* several utilities, including Maritime Electric and TransAlta, suggested that the Board continue to undertake surplus calculations for interruptible energy. The majority of the utilities, however, were of the view that such calculations were not required. Their reasoning was that, if exports could be discontinued with little or no notice, there would be minimal risk of the public interest being adversely affected. Ontario Hydro considered that licence conditions could provide adequate assurance that Canadian needs would be met. Pacific Gas and Electric proposed that surplus calculations be undertaken only if an interruptible export was for a period greater than one year, while B.C. Hydro maintained that no licence should be required for interruptible exports of less than two years duration.

A number of exporting utilities including B.C. Hydro suggested that the Board should not regulate

net zero exports such as equichange transfers, storage transfers, carrier transfers and loop flows, since the question of surplus does not apply to these types of inter-utility transactions.

The provincial governments which expressed views on the Board's surplus calculations for in-province requirements generally supported the positions of their utilities. The B.C. Government pointed out that it has issued Energy Removal Certificates for electricity exports from the province since 1980 and suggested that the Board accept such certificates as proof that the electricity is surplus to the province's requirements. The Québec Government suggested that the *NEB Act* should be amended to allow acceptance of provincial electricity regulations in place of federal regulations. The Ontario Ministry of Energy submitted that surplus procedures should focus on Canadian electricity needs beyond the exporting utility's province. The PC Opposition Caucus of Prince Edward Island, on the other hand, thought that a dispassionate review of surplus by the Board was necessary and that the Board's current surplus determination test represents a minimum acceptable standard.

Other submittors to the inquiry were divided as to whether the Board should continue to undertake detailed surplus calculations. Northwest Conservation argued that such calculations are required to protect the public interest. They also maintained, like Ontario Hydro, that surplus determination is good for export customers in that it assures them that supplies they contract to purchase will actually be available. Energy Probe suggested that electricity should be treated like most other commodities and only be regulated at the provincial level. They did feel, however, that federal regulation of surplus might be warranted in instances where there were clearly identifiable extra-provincial impacts. Mr. Bell proposed that surplus calculations be retained for firm exports but that no determination of surplus be required for interruptible exports which can be curtailed or terminated at any time.

The Offer Mechanism

The majority of utilities favoured a continuation of the practice of requiring first offers of *firm exports* to other Canadian utilities. B.C. Hydro and Manitoba Hydro emphasized that such offers must be made before delivery starts, since interception of a firm export during the course of a contract would destroy the whole concept of a firm sale and have an adverse effect on negotiations for subsequent export contracts.

Hydro-Québec and Newfoundland and Labrador Hydro opposed the offer mechanism because the surplus as determined by offers is a function of price and not necessarily of physical need. If the price is low, a neighbouring utility will buy power or energy proposed to be exported, making it no longer surplus to Canadian needs and vice versa if the price is high.

Hydro-Québec also opposed the offer mechanism on the grounds that it is inconsistent with a free-market concept. They noted at the same time, however, that complete deregulation of electricity exports is improbable at this time. N.S. Power disagreed with Hydro-Québec's free-market argument on the basis that, while interprovincial electricity trade is not currently subject to federal regulation, international electricity trade clearly is. In its view parliament intended that there be a distinction between the Canadian and export markets.

B.C. Hydro proposed the substitution of a ten- year standing offer system for the current offer mechanism. Under this proposal, each exporting utility would be required to file a ten-year forecast of available surplus capacity with the Board. B.C. Hydro thought that such forecasts would suffice to notify other Canadian utilities about purchasing opportunities. It would eliminate the need for exporting utilities to first offer to other Canadian utilities each firm contract being negotiated with an export customer.

N.S. Power opposed B.C. Hydro's proposal on the grounds that Canadians would not consistently have access to firm power intended for export. Ontario Hydro and Manitoba Hydro both felt that offers would do more to assure Canadian access to power to be exported than the declaration of surplus proposed by B.C. Hydro. Newfoundland and Labrador Hydro took the position that the exporter should be required to satisfy the Board that negotiations with neighbouring utilities had been carried out in good faith prior to receiving a licence to export.

A subject of considerable debate was the manner in which interconnected utilities could intercept *interruptible exports*. Much of the discussion related to the prices and other terms under which such

energy should be intercepted and is more appropriately dealt with in Chapter 4.2 in connection with the Board's second price guideline.

Ontario Hydro defended the right of an exporting utility to intercept the interruptible exports of another utility. It pointed out that, even when a utility is exporting, short-term transmission bottlenecks or local generation problems could necessitate its intercepting another utility's interruptible exports to supply another part of its system. Ontario Hydro also pointed out that one utility might have access to a higher-value export market than another. In this instance, there would be a net benefit to Canada if interruptible energy going to the low-value export market were intercepted and then exported to the higher-value market.

The provincial governments' positions on the need for the Board's offer mechanism to protect the requirements of interconnected utilities in neighbouring provinces were similar to those of their utilities. The Ontario Ministry of Energy supported a continuation of the offer mechanism as a way of ensuring that the electricity to be exported would be surplus to Canadian needs. The PC Opposition Caucus of Prince Edward Island also favoured retention of the offer process.

The Québec Government, on the other hand, maintained that the offer mechanism upsets commercial relations between utilities and that inter-utility electricity trade should be deregulated and left to the free market. It pointed out that the federal government has already taken steps to deregulate crude oil and natural gas exports and that electricity should be treated in a similar manner.

The B.C. Government supported B.C. Hydro's proposal that exporting utilities file with the Board ten-year forecasts of surplus capacity and argued that there be no requirement to offer each firm export contract or interruptible transaction to interconnected Canadian utilities.

3.2 Comments of the Hearing Panel

In the Panel's view, a proper assessment of the arguments of the various parties and of the proposals they put forward requires a re-examination of the rationale for the Board's surplus procedures. There was not a great deal of discussion of this at the hearing. Many of the views expressed below are those of the Panel.

The Panel thinks that, for surplus procedures to be maintained as a component of federal electricity export regulation, three conditions need to exist.

- First, electricity must be an essential commodity in the sense that any shortages would have serious consequences for electricity users.

- Second, there must be a real possibility that, in the absence of the Board's surplus test, current or anticipated provincial electricity requirements or the needs of accessible Canadian utilities would not be met.

- Third, there must be a divergence between the interests of the individual utility or its provincial government and those of the country as a whole with respect to the desirability of protecting future Canadian requirements.

Essential Commodity

An essential commodity might be defined as one on which a country's security, economic health or the well-being of its population depends heavily and for which there are no close substitutes readily available at reasonable cost. The Panel believes that electricity qualifies as an essential commodity in most uses. Over time, alternative energy forms could replace electricity in some applications; however, in most applications, there are no reasonable substitutes for electricity, even over the long-term.

Therefore, the Panel believes that maintenance of a secure and reliable supply of electricity within an exporting province through avoidance of supply constraints is vital to the public interest. Since each province in Canada can produce its own electricity, in one way or another, there is a question about whether adequate supply of power and energy need be a rationale for a surplus procedure. However, unexpected circumstances can arise whereby a province finds itself potentially short of power, while another interconnected province is exporting power.

Possible Supply Constraints

Hydro-Québec and the Québec Government argued that, because electricity is a manufactured product, there is no reason to test for surplus before

licensing electricity exports. The Panel concurs that there can be little question of the ability ultimately to develop sufficient capacity to meet growth of in-province demand and other firm commitments over some time period. However, because it takes time to construct and commission new facilities, the ability to increase generation capacity over the shorter run is limited. Moreover, transmission bottlenecks, environmental controversy over transmission corridors and power plants, financing limitations and policy controversy over authorization of new plant construction could all act to constrain the ability to expand capacity to meet increased load. For these reasons, the Panel does not agree with the arguments of Hydro-Québec and the Québec Government that electricity exports are indistinguishable from the mass of other manufactured products. Were this so, Québec and other provincial authorities would not need to exercise the careful supervision they do.

If, for example, future system expansion constraints were unanticipated at the time a new firm export contract were entered into, it is possible that there could be inadequate uncommitted supplies available to meet future in-province requirements. While the Panel believes such supply constraints could result in an inability to meet increases in future in-province requirements, it recognizes that the Board may not be any better than the utilities or the provincial governments at anticipating such supply problems when an export proposal is being considered.

This consideration also applies to anticipating the needs of utilities which are economically accessible to potential exporters. The Panel recognizes that these utilities are not constrained to examining their needs only when one of them proposes to export power; they may do so at any time and enter into agreements for future supply arrangements. Nonetheless, if an interconnected utility believes that it may be supply constrained while exports are being proposed, there is a case to be made for some federal oversight.

Divergence between Utility and National Interests

There may be a divergence in respect to consideration of the needs of economically-accessible Canadian utilities prior to the authorization of exports. It may be, for example, that an exporting utility would perceive that its net returns to sales on the domestic inter-utility market would be inferior to those from exports.

The Panel believes that utilities can generally close this gap by negotiation. However, if a utility wished to export electricity while being unwilling to negotiate such sales with other Canadian utilities on equitable terms and conditions relative to those achievable on the export market, it is arguably in the public interest that there should be federal oversight.

In sum, the Panel recognizes that electricity is an essential commodity, that supply constraints can arise, and that there may be divergence between the utility and the Canadian interest in assuring that Canadian needs are satisfied. There is, therefore, a case for maintaining some procedure under Section 83 of the *NEB Act*. The question is, what procedure is most appropriate for what kinds of supply? The Board now uses two procedures: the physical surplus calculation and the offer mechanism.

The Physical Surplus Calculation

The Panel generally agrees with the majority of parties that there is little need for a surplus calculation for such *interruptible exports* as day-to-day economy energy sales and other sales that are contemplated under interconnection agreements between Canadian and U.S. utilities. Such exports could be discontinued at short notice and there is minimal risk of the public interest being adversely affected.

The comments which follow relate to *firm power* exports as well as to blocks of so-called interruptible energy exports where the contract periods may be long and conditions of interruptibility onerous to the Canadian exporter.

The Panel does not believe that there is a significant divergence between the national and provincial interests with respect to the desirability of protecting future in-province requirements. Provincial authorities are responsible for in-province needs.

With respect to national needs, the calculation of projected surplus over the life of an export contract requires that projections be made of future demand and supply. These projections in turn de-

pend on an assessment of a number of economic and technical factors. On the demand side these include economic growth in the regions, the relative prices of different energy commodities, and the nature and pace of technological change. On the supply side different supply technologies involve different elements of uncertainty about future supply capability. Experts can differ in their assessment of the future behaviour of these factors depending partly on whether their perspective is regional or national. The Panel is not suggesting that the judgement of regulators in these matters is necessarily superior to that of the utilities - be they potential exporters or purchasers of electricity; indeed the Board should not have any problem accepting utilities' forecasts for their own needs. Differences of judgement do not constitute a strong rationale for regulation using surplus calculations.

It can happen that a Canadian utility interconnected with an exporter either foresees potential supply constraints it is helpless to overcome internally, or actually faces an unexpected shortfall during the period of an export licence. While the Board could use a surplus calculation to satisfy itself that exports do not preclude meeting the needs of these interconnected utilities, the Panel does not believe that export regulation using an NEB surplus calculation is the only, or even the most appropriate, way to resolve this situation.

The Offer Mechanism

There are three circumstances in which one Canadian utility may offer electricity to another. First, unrelated to export trade, Canadian utilities buy and sell electricity between themselves as described in Chapter 1. There is no federal regulation over these transactions. Second, as part of their applications to export firm power or blocks of energy under contract, utilities submit evidence in respect of surplus determination that they have offered the electricity to other Canadian utilities and that these utilities have refused it. While the Board may request utilities to make such offers as part of their applications, the Part VI regulations do not specify this requirement. Third, the Board may make it a licence condition that during the life of the licence, exporters first offer electricity to neighbouring utilities before exporting it. In general this condition is more relevant to interruptible volumes than to firm, where there are specific contractual commitments to the importer.

While Canadian utilities can and do negotiate supply arrangements between each other, the policy of ensuring that out-of-province Canadian consumers have first call on electricity exports is well established and long-standing. The rationale for the policy has been twofold: first, that as a matter of principle, Canadian electricity resources should be developed first for the benefit of Canadians and only then for the benefit of export customers; and second, that Canadian industries should not be disadvantaged relative to competing American industries because they are unable to access low-cost Canadian electricity being exported to the U.S. industries.

The Panel noted above a potential divergence between the national and utility interest in whether the exporter sells to the U.S. or meets Canadian requirements outside of its service area. The individual utilities understandably wish to maximize their return from electricity exports while the Government of Canada wishes both to maximize the return to the country as a whole from Canada's electricity resources and to ensure all Canadian electricity users are treated fairly and equitably relative to export customers.

Even with the offer mechanism in place, the characteristics of what is being offered for export do not usually match the needs of an interconnected Canadian utility. The quantity, period, scheduling, price and other terms of the proposed exports are uniquely tailored to the needs of the prospective U.S. customer.

The effectiveness of the offer mechanism in meeting out-of-province requirements depends on how flexible an exporting utility is required or willing to be with respect to modifying terms and conditions of a proposed export to suit the needs of Canadian utilities. If there were not much flexibility, Canadian utilities that have a requirement for electricity different from that of an export customer may not benefit from the offer mechanism. (These issues are discussed further in the context of the second price guideline in Chapter 4.2.) In this sense the Board's surplus calculation test has been considered to be complementary to the offer mechanism.

3.3 Options

The Panel sees a number of main options.

(i) Maintain the Status Quo

The Board could retain both the surplus calculation and the offer mechanism, continuing to discharge its responsibility under the Act in the same manner as in recent years.

One consequence of maintaining the status quo is that there would continue to be consistency across the country in terms of the kind of protection afforded to Canadian electricity users. Another is that the question of surplus would continue to be reviewed in detail by an independent and impartial body. The interested parties opposing exports would still have a public forum in which to express their views. It also might give assurance to export customers that the power they have contracted for is most unlikely to be diverted to Canadian markets.

With this option there would be no reduction in regulatory burden. Federal-provincial regulatory overlaps would persist. Provincial governments of most exporting utilities would likely resent a continued 'heavy' federal presence in this area.

(ii) Retain Offer Mechanism Only

The Board could accept provincial government surplus determination for in-province needs and rely on contracting between utilities and on the offer mechanism to ensure that the needs of out-of-province Canadian electricity users were protected. The effectiveness of the offer mechanism to other utilities in Canada depends upon how much flexibility they have to change the terms and conditions offered to Canadian utilities from those applying to the proposed export. This is discussed in Chapter 4.2.

One advantage of this option is that it would focus federal regulation on the area where there is most likely to be a discrepancy between provincial and national interests. It would also result in the elimination of some duplication of regulation between the provincial and federal levels.

However, it could result in reduced opportunities for interested parties other than utilities to express their views on the surplus nature of proposed exports.

(iii) Retain Offer Mechanism for Firm Exports and Deregulate Day-to-Day Interruptible Exports

Interruptible exports such as day-to-day economy energy sales would be completely deregulated with the offer mechanism being retained only for firm exports and exports for contract blocks of interruptible energy.

This would, of course, reduce the federal regulatory burden on exporting utilities.

The main implication of deregulating interruptible exports would be that neighbouring Canadian utilities would no longer be able to intercept such exports at the export price when and as they chose (i.e. the second price guideline would be inoperative). Thus, Canadian utilities which currently take advantage of this opportunity to obtain energy at a lower price than in their interconnection agreements with exporting utilities would be denied this source of cost savings.

(iv) Eliminate all Surplus Procedures

The elimination of all NEB surplus procedures would effectively put out-of-province Canadian utilities on a competitive footing with export customers. This option would require an amendment to the *NEB Act*.

Chapter 4
Export Price Regulation

Electricity export prices are determined by negotiations between electrical utilities; they are not set by the Board. However, subsection 83.(b) of the *NEB Act* states that the Board, in issuing a licence

> "shall satisfy itself that...the price to be charged by an applicant for power exported by him is just and reasonable in relation to the public interest."

The Act does not define what is meant by a price which is just and reasonable in relation to the the public interest. Therefore, the Board has developed three price guidelines to help it make this assessment. These guidelines are part of the Board's regulations setting out the information required with an application for a licence to export. The regulations are subject to change at the Board's initiative with the approval of the Governor in Council.

The continuing appropriateness and need for Board administration of the three price guidelines received much attention at the hearing. Each price guideline is addressed in turn.

4.1 The First Price Guideline

The Board, under the *NEB Part VI Regulations* subsection 6(2)(z)(i), requires an applicant to demonstrate that the export price "would recover its appropriate share of the costs incurred in Canada." The intent of this guideline is to ensure that all costs incurred as a result of the exports are recovered including those costs (termed indirect costs) of exporting electricity which Canada incurs as a country but which are not borne by the exporting utility. They include any environmental, land use and economic costs associated with exports which are borne by others. The intent of the first price guideline is to ensure that all costs associated with an export, which include both the direct costs to the exporter and the indirect costs to other groups, are recovered in the export price. (The total of direct and indirect costs is referred to here as social costs.)

Electricity exports are produced either from existing facilities which are excess to domestic requirements or from facilities the construction of which is advanced, prebuilt or dedicated for export purposes.

In the case of exports from existing facilities, social costs include the direct incremental production costs and any associated indirect incremental environmental costs attributable to the exports (e.g. costs related to power plant emissions).

As most exports have to date been generated from existing facilities, the administration of the Board's first price guideline has been uncontroversial.

Where exports are generated from dedicated or prebuilt facilities, potential exists for significant indirect costs to occur. These indirect costs include land-use costs related to flooding land for a hydro reservoir and costs arising from the special fiscal and financial status of provincial electric utilities.

Because provincially-owned utilities are exempt from federal income tax and their debt is provincially guaranteed, their required after-tax return on capital may be lower than that for most other business undertakings. Therefore, if Canadian utilities' electricity exports were only to earn back the utility cost of capital, devotion of society's capital to this activity would result in costs to Canada in terms of foregone higher profits and taxes on other kinds of investments to which this capital would otherwise have been allocated.

To assess whether electricity exports meet the first price guideline, the Board evaluates export applications within the framework of social benefit-cost analysis. The primary difference between a social benefit- cost analysis and a private profitability analysis of a proposed project is that the for-

mer takes into account all direct and indirect costs and benefits to all members of society whereas the latter only takes into account the direct costs and benefits to the project proponent. Benefit-cost evaluation uses the social discount rate for Canada, which is a measure of the weighted average pre-tax rate of return to all uses of capital in Canada. Thus, a social benefit-cost analysis provides a framework within which an export application can be evaluated from the national public perspective.

The issues raised at the inquiry with respect to the first price guideline can be grouped, for convenience, into two categories:

- discussion of whether there is a need for federal enforcement of the guideline or whether the Board could simply rely on parallel provincial approval procedures to satisfy itself that export prices would recover all associated costs in Canada;

- discussion as to how the guideline should be applied.

4.1.1 Views of Submittors

Need for NEB Enforcement of the First Price Guideline

A majority of the utilities expressed support in principle for continued application of the first price guideline by the Board, largely on the grounds that it is reasonable to ensure that export prices recover all associated costs in Canada. Ontario Hydro also noted that the guideline could be useful in that it could help provide assurance to concerned U.S. groups that export prices were not being subsidized.

B.C. Hydro, Hydro-Québec and Newfoundland Light and Power did not support continued Board enforcement of the guideline. B.C. Hydro and Hydro-Québec argued that their provincial regulatory authorities ensure that electricity export prices recover all associated costs, including all indirect costs, and that the Board should simply ensure that provincial approvals were in place before it granted an export licence. B.C. Hydro further stated that it would also take into account any extra-provincial costs associated with its export-related projects. Newfoundland Light and Power expressed the view that, if electricity could not be sold at a price which would cover all direct and indirect costs, the exporting province should be free to sell at whatever price it is able to get.

The question was also addressed of whether provincial government guarantees of provincial utilities' debts and the exemption of provincial utilities from income tax constituted a rationale for federal regulation. The utilities did not see that this provided any grounds for federal concern and, in particular, they did not agree that debt guarantees constitute subsidization of their capital costs.

The utilities were all of the view that competition for the export market and the related possibility that one export might displace another were not reasons for requiring federal regulation of electricity exports. They generally argued that market forces should determine which exports proceed and that the displacement of one energy export by another should not be considered as a cost to be recovered in the export price. Ontario Hydro did allow that the Board could consider whether the displacement of an existing export by a new export would be desirable, but maintained that if a competitive export application were denied there would have to be strong evidence put forward indicating why the denial would be in the national public interest. Finally, New Brunswick Power argued that natural gas exports should also be subject to a first price guideline to ensure fair competition between electricity and gas exports.

On the related question of the potential impacts of electricity exports by one utility on another utility's system operations the utilities generally agreed that this could be an area of concern. Although these impacts could be considered to be indirect costs associated with exports and, therefore, of relevance to the Board's deliberations under the first price guideline, most utilities felt that this was a question of system reliability and would be better handled through the utility reliability councils. This subject is further discussed in Chapter 7.

The Governments of B.C. and Québec noted that their provincial approval processes are designed to ensure that export prices recover all associated costs in their provinces and also take into account any adverse effects on other provinces. Thus, although they were in agreement with the principle behind the first price guideline, they argued that it would be sufficient for the NEB to simply satisfy

itself, prior to granting an export licence, that the appropriate provincial approvals were in place.

The Ontario Ministry of Energy was in favour of continued application of the first price guideline by the NEB as it has been administered in the past.

With respect to the question of competition between utilities for the export market, the provincial governments all agreed that there was no need for federal intervention. They were of the view that the most competitive exports would capture the available market and, if one export were to displace another, that would be in keeping with the normal workings of a competitive market.

The environmental protection groups argued in favour of strict federal enforcement of the first price guideline, particularly to ensure that all environmental costs in Canada would be recovered by export prices. Both the Peace Valley Environmental Association and La Société pour Vaincre la Pollution argued that provincial governments were often strong advocates of electricity exports and, be cause of this, provincial regulatory authorities could not be expected to provide neutral evaluation of export proposals.

Energy Probe argued that electricity exports were primarily a provincial concern and supported a complete withdrawal of federal regulation except in those instances where there are demonstrable national implications.

The PVEA argued that competition between Canadian electrical utilities and between electricity and natural gas for the export market could drive down export prices. They noted that this could necessitate the formation of a national electricity export marketing board, although they did not specifically advocate the formation of such a board. Rather, they argued that incremental electricity exports may not necessarily be in the national interest and that any proposal for exports from dedicated facilities warrants a careful review at the federal level. They were particularly concerned with proposals to export power from dedicated generating facilities and argued that the NEB should be responsible for certification of such facilities.

Energy Probe was of the view that competition between utilities for the export market did not warrant federal regulation.

The Sierra Club of Western Canada stated that it was not opposed to exports of surplus energy from existing facilities but was opposed to construction of export-dedicated facilities.

Application of the First Price Guideline

Discussion on the application of the first price guideline touched on the questions of the appropriate costs to be attributable to exports; whether compensation should be paid to injured parties; the appropriate discount rate to be used in Board evaluations; and the criteria the Board should use when evaluating export applications for export-dedicated generating facilities.

The utilities agreed that export prices should recover all associated social costs, including both the direct costs to the utility and any indirect costs to other groups, where such indirect costs could be identified and measured. Most also agreed that, in principle, exporters should pay compensation where it is possible to clearly identify both any damages associated with exports and the injured parties.

The utilities were of the view that the Board should use the utility's discount rate in evaluating export applications. Several utilities also noted that they conduct sensitivity analyses of their proposed exports using a range of discount rates. Hydro-Québec stated that it used a higher discount rate to evaluate export sales than domestic projects to reflect the higher risk involved in these sales. Ontario Hydro allowed that if any direct subsidies were provided to a utility, it would be appropriate to ensure that they not be passed on to export customers, but noted that there could be disagreement over what might qualify as a subsidy.

With respect to applications for exports from dedicated export facilities, the utilities all agreed that it would be appropriate for the Board to ensure that export prices recovered all associated social costs including all indirect environmental costs incurred in the exporting and adjacent provinces.

Maritime Electric and West Kootenay Power and Light expressed a concern about the possible domestic rate impacts of dedicating facilities to the export market. They argued that if a low-cost hydro-electric facility were dedicated to the export market, it could mean that Canadians would be forced to pay higher rates in the future if the exporting utility had to develop a more costly site to meet

its domestic customers' future needs. Some of the exporting utilities agreed that this could be a concern but argued that it would be unlikely to happen because they themselves were concerned to ensure that there would be no negative rate impacts on their domestic customers as a result of their exporting activities.

New Brunswick Power and Alberta Power argued that the Board should, in certain circumstances, permit exports for a time at below cost as long as the export price over the life of an export contract recovered all associated costs in Canada.

Provinces (Québec and B.C.) favouring provincial administration of the first price guideline recognized that the export price should recover all social costs. They agreed that compensation should be paid to injured parties in instances where it was possible to clearly identify both the costs and the injured parties. Their position was simply that the guideline and the compensation process could be adequately administered within their respective provincial regulatory processes.

The environmental protection groups argued that, where it is possible to identify parties injured by an exporter's activities, the exporter should be required to compensate those parties. Energy Probe went further and suggested that utilities be required to take out insurance on nuclear generating facilities to cover the possibility of being required to compensate the public in the event of an accident. It argued that, although the federal and provincial governments are currently responsible for mitigating the costs of an accident, it would be more appropriate for the utilities to bear these costs. Finally, Energy Probe argued that even in cases where specific parties could not be identified as having been injured by an exporter's activities, but where it was known that costs were incurred (eg. acid rain), the exporter should be required to pay compensation to appropriate provincial government agencies. These funds would then be earmarked for redressing the damages incurred.

There were no specific comments with respect to the appropriate regulatory treatment of subsidies but Energy Probe stated that electricity prices should reflect the true cost of the resources dedicated to the production of electricity.

The PVEA argued that benefit-cost analysis was an inadequate instrument by which to assess the desirability of export-dedicated facilities. With respect to export applications requiring major new facilities, they suggested that the applicant be required to demonstrate that the necessary surplus could not be achieved by implementing a conservation plan as an alternative to constructing new facilities. The PVEA also suggested that the Board could ask all interested parties to submit their views to the Board as to how the regulations could be changed to require applicants to consider feasible alternatives.

Energy Probe, the PVEA and the Sierra Club of Western Canada all argued that export prices should recover the full capital costs associated with any export-dedicated facilities; in their view, it would be insufficient for economy energy export prices to recover only incremental operating costs if associated facilities had been built specifically for export purposes.

With respect to rate impacts associated with the development of export-dedicated facilities, the Consumers Association of Canada (Manitoba) argued that the Board should satisfy itself that there would be no adverse impact on domestic rates before approving an export licence application.

4.1.2 Comments of the Hearing Panel

(i) Need for NEB Enforcement of the First Price Guideline

Whether there is a practical need for continued Board administration of the first price guideline largely depends upon the extent to which electricity exports from one province could impose either indirect environmental or economic costs on other provinces. The Panel believes that there may be a divergence between the national public interest and provincial interests for a number of reasons:

- the potential for extra-provincial technical and environmental impacts;
- the existence of special fiscal and financial arrangements for provincial utilities; and
- the potential displacement of one province's energy exports by those of another.

Potential for Extra-Provincial Technical and Environmental Impacts

The Panel recognizes that there is unlikely to be cause for national concern with respect to exports

from existing hydro facilities. Three of the major exporting utilities in Canada have primarily hydro-based systems and exports of surplus hydro power generally result in minimal incremental environmental effects. However, incremental exports from existing coal-fired plants could have deleterious effects on the environment both within the exporting province and in adjacent regions.

With respect to proposed new export-dedicated generating facilities, the construction of a dam on a river that flows across provincial boundaries could have important effects on neighbouring provinces. However, construction of a hydro dam that would affect river flows in an adjacent province would likely be subject to an inter-provincial agreement.

Incremental electricity exports from dedicated coal-fired plants could impose environmental costs on other provinces. Coal-fired plants dedicated to exports would likely be subject to provincial environmental review, but such a review process may not be adequate to account for the interests of other affected provinces.

Exports may also result in extra-provincial costs if they adversely affect the reliability and transfer capability of interconnected Canadian utilities. (This is discussed in more detail in Chapter 7 on International Power Lines.)

It may be useful to the smooth conduct of electricity trade if all interested U.S. and Canadian parties knew that a Canadian national regulatory agency had ensured that costs related to technical and environmental factors were to be recaptured in export prices. However, there is no federal mechanism available for transferring to affected parties that portion of export revenue earned to recover such costs.

The Existence of Special Fiscal and Financial Provisions for Provincial Public Utilities

The fact that, as agents of the Crown, electrical utilities do not pay federal income taxes can potentially lower their revenue requirements relative to a given after-tax rate of return in comparison with tax-paying firms. This in turn enables a utility to invest in projects which yield the equivalent of lower pre-tax rates of return than would be necessary to attract private investment. This may change investment patterns such that more investment is undertaken in the electricity sector and less in other, potentially more profitable, sectors of the economy. It may also be viewed as an indirect social cost in terms of foregone federal revenue which other taxpayers must make up relative to any given level of public sector expenditures.

The Panel thinks that the provincial backing of utilities' debt lowers the risk of utility debt to lenders and as a consequence lowers utilities' interest rates. It also allows for a higher debt to equity ratio, lowering utilities' overall cost of capital relative to that of the private sector. These effects of debt guarantees may provide advantages to the electrical utilities enabling them to bid away capital from potentially more profitable sectors of the economy.

Thus, the combination of income tax exemption and the provincial backing of utilities' debt may result in the utilities undervaluing their costs of capital relative to the full cost of capital in the Canadian economy. This implies that, although a utility may consider a proposed export project profitable from its standpoint, the project may not provide a return sufficient to recover the full costs in Canada.

The income tax exemption of Canadian electrical utilities derives from the Canadian constitutional provision that the Government of Canada not tax agencies of provincial governments. (Several investor-owned utilities serving the general public in Alberta and P.E.I. also benefit from this provision in the interest of rate-making equity between provinces.) The debt guarantee of provincially-owned utilities also derives from their status as crown agents. These constitutional and legal arrangements are not variables of regulatory policy. However, regulation can address the impact of these arrangements on the benefits to Canada from exporting electricity. By examining whether an export proposal would earn a rate of return at least equal to the social discount rate for Canada, the potential impact of these special arrangements is addressed.

Here, because international trade policy and foregone federal tax revenues are involved, the Panel finds it appropriate to retain some national regulatory oversight with respect to export cost recovery. The Board's administration of the first price guideline can help satisfy all concerned that neither tax, interest, nor debt leverage benefits are passed through to export customers.

The Potential Displacement of One Province's Energy Exports by Those of Another

Competition for export markets exists between Canadian firms in many industries and this constitutes no general grounds for federal regulation. It could be argued that there would be a case for federal regulation if provincial utilities were unfairly to undercut each others' exports. However, as long as the Board ensures that all associated costs are recovered by export prices, it is unlikely that this could occur.

(ii) Application of the First Price Guideline

Issues surrounding the application of the first price guideline relate to the discount rate to be used and to the impact of exports on provincial electricity rates.

These issues have different applicability to the different kinds of export transactions.

For interruptible exports from existing facilities, it is clear that export prices need only be compared with direct incremental costs of production and any associated indirect incremental environmental costs. Similarly, firm power exports from existing facilities must recover, as a minimum, the direct and indirect costs of producing the electricity. Though the negotiated price for sales of firm power frequently includes a capacity charge, this is not a matter for federal concern in terms of the export price since the capital costs are sunk.

Exports from advanced or dedicated facilities are invariably firm in nature. The prices for such exports should recover all associated costs in Canada, including the capital costs incurred in constructing the new facilities.

The Panel believes that benefit-cost analysis is an appropriate method by which to assess the desirability of export facilities. Benefit-cost analysis compares the optimal system expansion path with and without the exports. If an interested party does not agree that the applicant has chosen the most economic alternatives to the export project, it may argue its case before the appropriate regulatory tribunal.

With respect to the appropriate discount rate to be used in benefit-cost evaluations of export applications, the Panel believes that a firm which does not pay taxes or which is subsidized can accept a lower pre-tax rate of return than a tax-paying or unsubsidized firm. In other words, its costs of capital will diverge from the generally applicable market cost of capital, thereby reducing the discount rate it may use in its project evaluation process. To correct for this divergence, the Panel believes that the evaluation should use the social discount rate. If proposed projects yield positive net benefits when discounted at the social discount rate, they would earn a rate of return on capital no less than that earned in a mix of alternative uses in Canada.

Finally, there is the concern that domestic electricity rate increases could occur as a result of the construction of export-dedicated generating facilities. The Panel notes that the responsibility for setting electricity rates lies with provincial authorities. In any event, the Panel believes that, from the national perspective, the relevant question is not whether the financial costs associated with the investment in new generating facilities could result in domestic rate increases. The question is whether the benefits of exports would outweigh the costs over the economic life of the generating facilities. To the extent that exports impose higher future electricity costs on Canadians, they are taken into account in the benefit-cost analysis. The acceptability of any changes in intra-provincial rates over time due to an export-related project is not a national concern.

4.1.3 Options

The Panel sees a number of main options:

(i) Maintain the *Status Quo*

The option of maintaining the first price guideline is advantageous in several respects. First, it would allow the national authority to continue to assure all interested parties that no special cost advantages enjoyed by utilities are being passed on in export prices. Second, it would provide a forum in which any concerns about extra-provincial impacts associated with electricity exports can be addressed. In this connection, the active administration of the first price guideline can provide Canadian electricity exporters with support against any attacks of unfair competition from U.S. interests opposed to increased Canadian electricity exports. As long as the first price guideline remains an effective regulatory criterion, it cannot reasonably be argued that electricity export prices are subsidized. In terms of implementation, the Board can judiciously apply the guideline, requiring

minimal information where it is fairly evident that export prices would recover all associated costs.

The disadvantage of maintaining the first price guideline may be that it could be perceived as regulatory duplication. If the benefits and costs associated with most applications were almost identical from both a provincial and a national perspective, there would be no practical need for the administration of the first price guideline at the federal level. However, it is not necessarily the case that provincial and national costs and benefits are the same.

One variation would be to require such evidence only where there were major facilities expenditures or if there were a potential for substantial extra-provincial impacts.

(ii) Reliance on Provincial Approvals

The Board could simply require export applicants to obtain provincial approvals and not require any further evidence to demonstrate that the first price guideline would be satisfied. This would constitute an implicit reliance on provincial regulatory authorities and as such may not necessarily preserve the intent of the guideline. A variant of this approach would be to rely on provincial approvals in the absence of complaints during the Board's hearings. If there were complaints the Board could evaluate the intervenor's case and, if warranted, could require the applicant to file supporting material to demonstrate that the export price would recover all associated costs in Canada.

This option would result in a reduction in the federal regulatory burden on exporting utilities. It would also possibly be perceived, from the provincial perspective, as allowing exporters more discretion in pricing their exports.

One disadvantage of this option would be that, if a utility wished to pass through to export clients social and financial advantages it may enjoy, it would be free to do so. A further concern is that an exporting province may ignore costs borne by neighbouring provinces as a direct result of an export proposal. It is likely that where these concerns were significant, pressures would build for federal involvement, precluding sole reliance on a provincial decision. The NEB hearing process provides a forum for concerns to be aired, examined and ultimately weighed from a national perspective.

Another disadvantage of this option is that sole reliance on provincial evaluation could weaken the Government of Canada's ability to respond to any parties who may claim that Canadian electricity exports have unfair competitive advantages and who may argue that provincial government and government-owned utility interests are indistinguishable.

(iii) Delete the First Price Guideline

This option would reduce federal regulation at the expense of the advantages of maintaining the first price guideline set out in (i).

It would be supported by some exporting utilities and their provincial governments.

4.2 Second Price Guideline

The Board, under the *NEB Part VI Regulations* subsection 6(2)(z)(ii), requires applicants to demonstrate that the export price "would not be less than the price to Canadians for equivalent service in related areas". To demonstrate compliance, it has been the practice that utilities first offer the power proposed to be exported to economically accessible Canadian utilities under the same terms and conditions as offered to the U.S. purchasers.

For firm power exports, offers have been made in a letter to neighbouring Canadian utilities and have generally been based on the export price. The offer is made once, before the export contract becomes effective, but not thereafter.

For interruptible exports, Canadian utilities have been allowed to intercept exports, based in some cases on the export price and in other cases on the price resulting from the applicable interconnection agreement between Canadian utilities. Accessible Canadian utilities may intercept interruptible exports at any time because of emergency needs or because they are cheaper than other supplies at the time.

Until recently, the application of the second price guideline has been uncontroversial.

For interruptible exports, and especially for short-term transactions covered by inter-utility inter-

connection agreements, licence conditions required that similar terms and conditions be offered to Canadian utilities. It was generally understood that one of the conditions was that the export be offered at the export price. Export prices have historically been above those applicable to equivalent transactions under bilateral agreements between interconnected Canadian utilities. In these circumstances, Canadian utilities had no economic incentive to intercept such exports, and the guideline did not interfere with normal inter-utility trade either between Canadian utilities or between Canadian and U.S. utilities.

Recently, however, the possibility that some export prices could be lower than domestic inter-utility prices has introduced a conflict between exporting utilities, which seek the highest available prices in each market, and interconnected Canadian utilities, which believe they should not pay prices higher than those paid by export customers.

In these changed circumstances, some utilities requesting licences for interruptible exports asked the Board to grant licence conditions which would allow them to offer exports to Canadian utilities at the higher of the export price or the price under their relevant interconnection agreements. Such a request first appeared in applications by Hydro-Québec.

In the case of proposed exports by Hydro-Québec to New England,[1] there were two classes of interruptible energy. One had firm characteristics in respect of the total quantities to be delivered. In this case, the Board was dealing with a new kind of relatively long-term electricity export. It was recognized that, under the requested licence conditions, it would be possible to offer a lower price to export customers than to accessible Canadian utilities. However, the evidence was that this situation would seldom arise in the circumstances of the proposed exports. With respect to short-term interruptible exports, the Board recognized that Hydro-Québec's normal commercial practices could lead to export prices being lower than prices to interconnected Canadian utilities. However, it heard no opposition to allowing normal commercial practices to prevail. The Board found that the balance of the public interest lay in issuing the licences with the requested conditions attached.

For the majority of existing licences, firm and interruptible, exports must be offered to interconnected Canadian utilities at the export price. While the Board deals with each application on its merits, the Canadian offer condition in the Hydro-Québec licences was perceived as possibly indicating a fundamental change in the Board's application of the second price guideline. Subsequent decisions led to the perception that there were inconsistencies in Board decisions. Uncertainty has arisen as to the Board's intentions. Utilities are especially concerned, since variations in regulatory treatment of such interruptible exports could result in different economic benefits to buyers and sellers and could interfere with accepted trading practices among interconnected utilities.

Clearly, the second price guideline has become one of the most challenging issues of electricity export regulation for the Board.

The key issues raised at the hearing concerning this guideline were:

- the rationale for it;
- its interpretation;
- its application; and
- its economic impacts on utilities.

4.2.1 Views of Submittors

Rationale for the Second Price Guideline

Hydro-Québec contended that the inter-utility electricity market is competitive and that consequently there is no need for the second price guideline. It argued that prices should be freely negotiated between buyers and sellers just as they are for other manufactured products. Hydro-Québec maintained that the possibility that a Canadian utility might pay higher prices than a U.S. utility for surplus electricity purchased from a Canadian seller was a reflection of the way markets operate. Any interference by the Board in the prices that exporters could charge other domestic utilities would unfairly weaken the bargaining position of sellers. Apart from the issue of prices, Hydro-Québec acknowledged that in cases where there was insufficient energy to serve both export and out of province Canadian requirements, it would offer energy to Canadian utilities first.

N.B. Power agreed with Hydro-Québec that, in the case of interruptible economy energy, if an export-

1. NEB Reasons for Decision in the Matter of an Application Under the NEB Act of Hydro-Québec, August 1984, page 52.

ing Canadian utility could negotiate higher prices with a Canadian utility than with a U.S. customer, through the application of a split-savings or other pricing formula, the negotiated prices would represent the fair market value for the service. They argued, therefore, that any intervention by the Board affecting the interconnection prices would be an unwarranted and unfair intrusion into the operation of a free market. However, they had no objection to the principle that interconnected Canadian utilities not pay more than export customers for firm power.

Most other utilities and provinces, on the other hand, generally supported application of the second price guideline based on offers to Canadians at the export price. They believed the rationale for this guideline was predicated on Canadians having rights of first refusal at the export price in order that they pay no more for Canadian energy than do U.S. customers.

Maritime Electric, Newfoundland Light and Power and Ontario Hydro maintained that the second price guideline should be retained to ensure that Canadians were not discriminated against vis-à-vis export customers.

Interpretation of the Second Price Guideline

Critical to the application of the second price guideline is the appropriate interpretation of the term "equivalent service".

Hydro-Québec and the Québec Government were the only submittors to suggest the abandonment of the requirement that prospective exporters make offers of equivalent service to interconnected Canadian utilities. Their reasoning was that two services could never be equivalent, even if they were physically identical, because different customers would always place different economic values on the service. They further argued that, even if an export customer and a Canadian customer placed the same value on a given service, the service to the export customer need not be equivalent to the service for the Canadian customer because the selling utility might place different values on the sales. Given that equivalent service could never be defined objectively, they contended that undesirable uncertainty would arise because the seller would never know in advance how the Board would apply the concept to particular export proposals.

In the case of interruptible economy energy sales, N.B. Power agreed with Hydro-Québec that, if two potential customers would derive different economic values from the purchase of energy, the services would not be equivalent, even if physically identical. In other words, if the prospective U.S. customer had lower avoided-costs from purchasing than did interconnected Canadian utilities, then offering a lower price to the U.S. utility would not constitute a violation of the second price guideline and would not be unfair because the services would not be equivalent.

Ontario Hydro and Maritime Electric disagreed with Hydro-Québec and N.B. Power on the appropriate interpretation of equivalent service. With regard to interruptible economy sales, Ontario Hydro argued that offers arising from a proposed export should be at the export price. They contended that the determining factor of the offer price should be the nature of the service itself and not the purchasing utility's valuation.

Maritime Electric argued that the term "equivalent service" should not be interpreted in a narrow sense. To do so would be to render the second price guideline meaningless. Rather, equivalent service should be given a broader meaning. Its view was that services should be equivalent if they generally provide comparable products to different customers. In Maritime Electric's opinion, equivalent service should be defined in terms of the value of the product being provided and not in terms of the value of the product to the purchaser.

Economic Impacts of the Guideline on Utilities

Redistribution of Benefits

Several parties raised issues related to distributional consequences of enforcement of the second price guideline. Hydro-Québec, Manitoba Hydro and N.B. Power all argued that requiring that exporters offer prices to Canadian utilities which were no higher than export prices would involve a redistribution of income from the selling utility's provincial customers to the intercepting Canadian utility's customers. They claimed that this would be tantamount to using electricity price regulation as a means of providing subsidies.

Maritime Electric disagreed that enforcement of the second price guideline would result in the selling utility subsidizing the buying utility. They

argued that, if the selling utility finds it profitable to export electricity at a certain price, sales of the same service to domestic utilities at the same export price would necessarily also be profitable and hence there would be no subsidization. They pointed out that, in some cases, enforcement of the second price guideline might result in the selling utility merely earning reduced profits on sales to interconnected Canadian utilities.

Economic Efficiency

Most submittors who commented on the effect of the second price guideline addressed it from the perspective of fairness and equity. A few submittors, however, commented in a general way on the economic efficiency implications of either enforcing or abandoning the second price guideline.

Hydro-Québec argued that mandatory offers to Canadian utilities at prices lower than those stipulated in existing interconnection agreements could result in the foregoing of otherwise profitable export opportunities because resulting reductions in domestic revenues might exceed the profits from exports. They also maintained that exports could be jeopardized if export customers perceived an additional risk resulting from the fact that the electricity they had contracted for, after prolonged negotiation, could be intercepted by a Canadian utility. Given these factors, they argued that enforcement of the second price guideline would be economically inefficient.

Maritime Electric, on the other hand, argued that, if U.S. utilities could purchase electricity from Canadian sellers at lower prices than those available to Canadian utilities, then some Canadian industries would suffer a relative competitive disadvantage. They argued that enforcement of the second price guideline would ensure that industrial economic benefits would not be lost to U.S. competitors.

Application of the Second Price Guideline

Price to be Offered

N.B. Power favoured formula pricing of interruptible exports and maintained that this was the accepted practice among interconnected utilities, be they in the U.S. or Canada. Manitoba Hydro argued for a regulatory treatment that would not expose the exporting utility to reduced revenue from existing sales if Canadian utilities were allowed to intercept exports. It stated that a Canadian utility should be allowed to intercept exports at the export price only if it were making additional purchases over and above its other ongoing transactions. Thus, Canadian utilities should not be allowed to intercept exports in order to displace higher-priced sales that are already taking place. This position was also taken by B.C. Hydro.

Others, including Ontario Hydro and Maritime Electric, argued that the export price should be offered for all categories of electricity even if this merely resulted in a higher domestic inter-utility price being displaced by a lower export price.

B.C. Hydro, supported by the B.C. Government, suggested that utilities which planned to export be required to file annually ten-year forecasts of available supply with the Board so that interested Canadian utilities would not have to rely on the offer mechanism. They claimed that this would be fairer to potential domestic customers. Under this approach, because there would be no requirement that exporters make formal offers at export prices to Canadian utilities, export prices could be lower than interconnection prices. Provincial regulations in British Columbia, however, would ensure that export prices would never be lower than the prices that bulk customers in the province would pay for similar services.

Treatment of Rebates

Some submittors questioned whether any price rebates applicable to export customers should also have to be made available to interconnected Canadian utilities. An exporter may offer a rebate to an export customer for a variety of reasons. For example, if a U.S. utility offered to resell electricity exports to another U.S. utility not directly accessible to the Canadian exporter, the exporter may offer a rebate to the U.S. utility as a payment for wheeling. Alternatively, a Canadian exporter may offer a rebate in order to enter a new market or in consideration for any additional capital costs that an export customer would need to incur in order to take electricity.

While there was widespread agreement that, in principle, rebates should be included in offers to Canadians as long as the seller received equivalent net benefits from the domestic market as from the export market, there was some dispute over the question of when the benefits to the seller could be considered equivalent.

N.S. Power, Manitoba Hydro, and TransAlta argued that it would be appropriate to require that offers to Canadians include any rebates available to U.S. customers. Other submittors contended that including rebates in domestic offers might not be appropriate in some cases. Maritime Electric, while maintaining that incentive rebates to open new markets should be included in offers to Canadians, argued that cost-related rebates for wheeling should not have to be included. Their reasoning was that, in the new market case, the seller would not receive any benefit over that which it would receive by selling into an existing Canadian market but, in the wheeling case, the U.S. utility would be providing a service that a Canadian utility could not provide.

N.B. Power, on the other hand, argued that rebates to open new U.S. markets should not have to be offered to Canadians unless a sale would also represent a new market, but rebates in consideration for U.S. facilities construction should be offered to Canadians.

Ontario Hydro maintained that, in cases where rebates were offered to U.S. utilities in consideration for additional construction costs, it might not be appropriate to require identical offers to Canadians. They argued that the Board would have to decide on a case by case basis if some discount should be available to Canadians. In other cases, Ontario Hydro indicated that, unless the exporter could demonstrate that it would be inappropriate, rebates should be available to Canadians.

Tenure of Offer

There was general agreement on the question of whether the export price should continue to meet the guideline throughout the duration of the proposed export. The prevailing view was that, as long as Canadian utilities had the opportunity to take a firm (or term) export at the export price and with appropriate modifications, once an offer was rejected, Canadian utilities would lose all further right to the export. For example, Maritime Electric, argued that, if interconnected Canadian utilities could opt in at any time, export sales could be frustrated because of the great uncertainty this would create for the export customer about the reliability of firm contracts. For economy energy trade, where interception can occur with every transaction, tenure of offer is not an issue.

Modifications in Terms and Conditions

There was a wide range of views as to whether an exporter should be required to make modifications in the specific terms and conditions - other than price - of a firm export contract to meet the needs of interconnected Canadian utilities. On the one hand, N.S. Power said that an exporter should not be required to make any modifications because the services would no longer be equivalent. On the other hand, Newfoundland and Labrador Hydro argued that the fact that negotiations leading to an export contract are often lengthy is evidence that purchasers have unique and specific requirements. It maintained that it would be extremely unlikely that the terms and conditions negotiated by the export customer would be appropriate to interconnected Canadian utilities. Newfoundland and Labrador Hydro contended that the offer mechanism, even allowing for modifications, would be inadequate and suggested that, before any exports are licensed, an exporter should be required to enter into serious negotiations with Canadian utilities to arrive at contracts spelling out detailed and mutually agreeable conditions and at prices appropriate to the domestic market.

Most parties who commented on the issue, including Ontario Hydro, Manitoba Hydro, Maritime Electric, and TransAlta, agreed that exporters should be required to modify the terms and conditions of an export proposal if requested by interconnected Canadian utilities. There was also general agreement, however, that it would be reasonable to require modifications only to the extent that no significant extra costs would be imposed on the seller.

Quantities to be Offered

Several submittors addressed the specific question of whether an exporting utility should be required to make available to interconnected Canadian utilities a quantity of power and energy that would be less than that specified in the firm export contract. Those who commented on the issue, including Maritime Electric, N.B. Power, Ontario Hydro, and Manitoba Hydro, said that, in principle, Canadian utilities should be required to offer, prior to export, all or any part of the proposed sale to interconnected Canadian utilities. Maritime Electric maintained that without this opportunity, smaller utilities could be effectively precluded

from participating in the offer process because they could not take entire export contracts.

There was general agreement that the requirement to offer less than the full export quantity could be waived if partial pre-emption would result in the loss of the larger export sale. As Ontario Hydro and others pointed out, an export sale could be lost if the selling Canadian utility had insufficient capacity to supply both the entire export contract and the smaller Canadian demand and if the U.S. utility were unwilling to purchase the residual after Canadian pre-emption. Ontario Hydro argued that, before the requirement that a portion of the export be made available to Canadian utilities were waived, the exporter should have to adduce evidence demonstrating that such a waiver would result in the loss of the export.

Unbundling of Export Packages

The question of whether an exporter should be required to offer the individual components of an export package separately was addressed by various parties, including Maritime Electric, N.B. Power, Ontario Hydro, Manitoba Hydro, and TransAlta. Generally, the views expressed were similar to those on the issue of partial interception of export quantities. The prevailing opinion was that, in principle, Canadian utilities should have the right to take individual components of an export package. Maritime Electric argued that without this right, exporters would have the incentive to package export contracts in such a way as to prevent some Canadian utilities from obtaining electricity at lower prices than would otherwise be available.

Again, there was agreement that interconnected Canadian utilities should not have the right to intercept a component if a larger export sale would be lost because the U.S. utility refused to accept a truncated package and the exporter did not have sufficient capacity to restore the entire contract. Maritime Electric and Ontario Hydro both maintained that if an exporter wanted to have waived the requirement to unbundle a package, it should have to demonstrate that the entire export package would be otherwise jeopardized.

4.2.2 Comments of the Hearing Panel

The long-standing policy of the Government of Canada is that Canadians, as a matter of principle, should have the first opportunity to purchase a given quantity of electricity at prices no higher than those made available to export customers.

There is also an economic consideration. Given the structure of the domestic utility industry, absent some federal regulation, exporters could practice price discrimination between domestic and export customers for Canadian electricity.

Given then that it is appropriate to prevent Canadian utilities from paying higher prices than export customers for equivalent services, the second important issue that needs to be addressed relates to the definition of equivalent service.

In the Panel's view, two services should be considered equivalent as long as they are comparable at least to the extent that the costs to the seller for providing them are similar, even if the services were valued differently by the different customers.

The Panel supports the view, expressed by the Board in a previous decision[1], that in a competitive market, a customer that attached a greater value to a service should not pay a higher price than a customer that attached a lesser value to that service. In the Panel's view, it would be discriminatory if a Canadian utility had to pay a higher price than a U.S. customer for a physically equivalent service solely because it placed a greater value on the service due to higher cost alternatives. The Panel is therefore of the view that, under the second price guideline, offers to Canadian utilities should be at the export price.

If the second price guideline were administered so as to allow Canadian utilities access to exports at the export price, the exporting utility could receive reduced revenue from domestic sales because the sale to a domestic utility at the export price could displace sales otherwise made under an interconnection agreement at a higher price. Although utilities may want to maximize their benefits from sales to interconnected utilities this, in the Panel's view, does not amount to a right for them to do so. Given that the proposed export would be profitable in the first place, sales of an equivalent service to Canadians at the same price would necessarily also be profitable, albeit not necessarily to the same extent.

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1. NEB Reasons for Decision in the Matter of an Application under the NEB Act of Maritime Electric Company Limited and in the Matter of the Cross-Application under the NEB Act of the New Brunswick Electric Power Commission, January 1985.

Moreover, the Panel believes that enforcement of the second price guideline could have beneficial economic effects from the national perspective. There are three possible sources of national economic efficiency gains.

First, in cases where application of the second price guideline resulted in domestic inter-utility prices being lowered to equal export prices, electricity consumption in the purchasing utility's province would increase. This represents an economic efficiency improvement because more output is consumed and produced at prices closer to cost than otherwise. The Panel believes this efficiency improvement would be present in most cases, even if the selling utility's revenues were, as a result, lower than otherwise because it could not sell to neighbouring Canadian utilities at prices fully reflecting the value of service to them. These considerations are perhaps more pertinent to firm electricity trade involving long-term embedded costs and rate structures than to economy energy trade, the volume of which is not always predictable for rate-making purposes.

Second, if Canadian utilities with higher-cost generation could purchase additional long-term firm electricity from lower-cost exporting utilities at more favourable export prices, the need to build additional higher-cost facilities to meet their own requirements would be reduced. This would enhance production efficiency and national income.

Third, the second price guideline may result in increased benefits to Canadians for any class of transactions. It is usual practice for any Canadian electricity exporter to first attempt to sell into the market where the marginal cost of generation is highest. If that market is the U.S., absent the second price guideline, it would export, even though the marginal cost of generation in a neighbouring province may exceed the export price. In this situation, applying the second price guideline causes the seller to offer the energy to a neighbouring Canadian producer at the export price. If the neighbouring utility bought this energy instead of generating his own more expensive energy, the net gain to Canada would be the difference between the avoided generation cost in the neighbouring Canadian system and the export revenue foregone by diverting the energy from the export market to the domestic market.[1]

It must be recognized that enforcement of the second price guideline could result in reduced economic benefits because export sales might be lost. This can happen because, if the exporting utility stood to lose more net revenue by displacement of higher-priced existing sales through interception of exports than it would earn on the export, it may choose to forego the export. Displacement in and of itself is not a sufficient reason to waive application of the second price guideline. The Panel agrees that it would be economically undesirable if an exporter chose to forego an otherwise profitable export sale so that domestic utilities would continue to pay the higher interconnection agreement prices. The Panel notes that parties favouring retention of the second price guideline agreed that strict enforcement could be waived if this would result in an export sale being frustrated to the economic detriment of Canada. The Panel concurs with this view.

In respect of rebates, there is no question that an exporter should be allowed to offer whatever rebate it deemed necessary in order to make an export sale - subject, of course, to the export price (net of rebate) recovering its appropriate share of costs incurred in Canada. In the Panel's view, however, the exclusion of corresponding rebates in offers to Canadian utilities would normally be discriminatory if the exporter would derive a higher profit margin from the Canadian market than the export market.

The Panel recognizes that rebates are offered to export customers for a variety of reasons. If, however, an export sale net of rebate were profitable, sales of an equivalent service to Canadians at the export price net of rebate would also be profitable. However, the Panel agrees that there could be cases in which offers to Canadians net of rebates could result in reduced benefits to Canada as a result of losing an export opportunity, for example, a new market. In such cases the Board should be prepared to waive the requirement that rebates be

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1. A simple example illustrates the point. Suppose that generation costs were 140 in the U.S. and 120 in the neighbouring province. The selling utility has a limited hydro surplus to sell at zero marginal cost, there being agreements in place with both potential clients to sell at 80% of their marginal cost.

Without the second price guideline, the energy would flow to the U.S. for 112. The net loss to Canada would be 8, because the neighbouring province continues to produce for 120, while the exporter earns 112.

With the second price guideline, the seller would offer this energy to the neighbouring province for 112. If the neighbouring province bought it, Canada would forego 112 on the export market but save 120 of expensive generation, yielding a net benefit to Canada of 8.

offered to Canadian utilities but the onus should be on the exporting utility to make the case.

As to the question of the *tenure of the offer*, in the case of firm sales the Panel thinks that once a Canadian utility has rejected an offer made at the export price along with other appropriate conditions, it should forego any further right to the electricity to be exported. In the case of interruptible energy, interconnected Canadian utilities should have an on-going right to intercept electricity that would be exported.

In the Panel's view, interconnected Canadian utilities should also have the right to request that an exporter modify the terms and conditions of a firm export contract to the extent that these would not impose additional costs on the seller. The Panel notes that because utilities have unique needs it is unlikely that the specific terms and conditions in a firm export contract would in most cases fit the needs of an interconnected Canadian utility.

The Panel also believes that interconnected Canadian utilities should have the right to take only a portion of the quantity negotiated in a firm export contract as long as this would not result in the loss of a larger export sale. (This loss could occur if the Canadian utility had insufficient supply to cater for both markets and the viability of the export contract depended on delivery of the importer's full requirement.) Enforcement of the second price guideline in this way would limit the possibility of Canadian utilities paying higher prices because they could not absorb export quantities.

For similar reasons, Canadian utilities should have the right to intercept any component of a *bundled export contract* as long as a larger export sale would not thereby be lost.

4.2.3 Options

The Panel sees a number of main options.

(i) Strict Enforcement

The Board would require that exporters offer the export price to interconnected Canadian utilities for all categories of electricity exports. In the case of interruptible exports or economy energy exports, this would be achieved by the interception mechanism.

Equivalent service would be determined with reference to the nature of the service and not with reference to each customer's economic value of service.

Offers to Canadian utilities would include any rebates that would give rise to the same net returns in both the export and domestic markets, unless the Board were satisfied that inclusion of rebates would result in reduced benefits to Canada stemming from loss of an export sale.
Exporters would be required to offer any part of a firm export quantity or individual component of an export package on non-discriminatory terms and conditions.

In the case of a firm export contract, the exporter would be required to modify offers to Canadian utilities as long as the requested modifications would not impose additional costs on the exporters.

In cases where the exporter could demonstrate that enforcement of the second price guideline would result in the loss of an export sale, the Board could consider waiving strict enforcement. The Board would evaluate all relevant supply and demand information in deciding upon the merits of a request for waiver.

This approach to the second price guideline would limit the possibility that Canadians be unfairly discriminated against vis-à-vis export customers; at the same time it could encourage economic efficiency.

Utilities opposed to the second price guideline would consider strict enforcement as unduly constraining their marketing strategies.

(ii) Price Monitoring and Complaints

Under this option, the objective of the second price guideline would be maintained, but the exporter would not be required to demonstrate, prior to making an export, that Canadians would not pay more than the export customer for an equivalent service. Compliance with the guideline would be overseen by on-going monitoring combined with a complaints procedure.

While, in principle, monitoring could prevent exporting utilities from charging higher prices to interconnected Canadian utilities than to export customers, practically it would be difficult to administer. Interruptible rates often vary widely over

very short periods of time, making it difficult to determine after the fact whether the second price guideline was met.

A complaints procedure would result in the utilities monitoring themselves. A potential problem with this approach is that Canadian purchasing utilities may have difficulty obtaining the price information they need to ensure they are not paying more than are export customers. For a complaints-basis option to be seen to be effective and equitable, there would have to be an adequate flow of essential information between utilities and the Board would have to be empowered to adjudicate complaints.

Under this option it would be desirable for the Board to provide a definition of equivalent service so that utilities could have a better understanding of their rights and obligations.

There was little support for this option at the hearing.

(iii) Maintain the Guideline for Firm Exports but Eliminate for Day-to-Day Energy Exports

This option would preserve the second price guideline for firm exports for which the economic efficiency impacts are stronger. It would not prevent Canadians from paying more than export customers for day-to-day interruptible energy.

(iv) Elimination of Second Price Guideline

Exporting utilities would have no obligation to make offers to Canadian utilities before exporting electricity. It would be up to interconnected utilities to negotiate the best prices they could with exporting utilities.

Price discrimination and resulting less-efficient electricity supply, consumption and pricing arrangements could result.

The acceptability of this option would differ between utilities depending upon their future interests as exporters or buyers of Canadian electricity.

4.3 Third Price Guideline

The Board, under the *NEB Part VI Regulations* subsection 6(2)(z)(iii), requires applicants to demonstrate that the export price

> "...would not result in prices in the country to which the power is exported being materially less than the least cost alternative for power and energy at the same location within that country."

The Board originally adopted its three price tests in a 1967 decision with respect to a gas export application by Westcoast Transmission Company Limited. In that case, the Canadian exporter faced a U.S. buyer with strong market power since the exporter had few realistic alternative markets, either in Canada or the U.S. In that context, the third price guideline was considered helpful to ensure that Canadian gas exports were priced at fair market value. Because it was feared that the same imbalance of bargaining power might exist in the North American electricity market, the Board in 1970 extended the three price guidelines to electricity exports.

The third price guideline has not been controversial.

With respect to interruptible energy exports, administration of the guideline has not been difficult. In many cases export prices are based on price formulae which include the purchaser's decremental costs.

For exports of firm power the Board has encountered some practical difficulties in satisfying itself that the guideline would be met. For example, firm power exports must sometimes be compared with hypothetical alternatives available to the importing utility. It can be difficult to obtain realistic estimates on the cost of these alternatives. Recognizing this difficulty, the Board has approved some export applications in the absence of complete evidence that export prices would satisfy the third price guideline. In general the Board has been flexible in its application of the guideline.

4.3.1 Views of Submittors

With the exception of N.B. Power, all the major exporting utilities said that the third price guideline should be dropped. They argued that it was often difficult to obtain sufficient information on the alternatives available to the purchaser and that, in many cases, the quality of any such information was of limited value to the Board's deliberations. They maintained that all exporters seek to maximize their revenues from exports and questioned

the usefulness of the guideline. Hydro-Québec also mentioned that, in some cases, determining the alternative costs to U.S. purchasers would involve making judgements on the future direction of U.S. state regulatory practices and questioned whether this was appropriate. B.C. Hydro suggested that the existence of the third price guideline hampers export marketing efforts as it sends a signal to potential importers that the benefits of purchasing from Canada will be limited.
Saskatchewan Power, Newfoundland and Labrador Hydro and Pacific Gas & Electric argued that, as long as exports satisfied the first price guideline and would generate sufficient net benefits to make them worthwhile to the exporter, the third price guideline was unnecessary.

N.B. Power and all smaller utilities supported the retention of the third price guideline to the extent that practical information on cost alternatives to the importer could be obtained. New Brunswick Power further argued that there were possibilities of interfuel competition between electricity exports and other energy exports. Accordingly, it advocated that the guideline be applied to other energy forms to ensure that all forms of energy exports received the same regulatory treatment. Maritime Electric, Newfoundland and Labrador Hydro and the Ontario Ministry of Energy said that the requirement to respond to the guideline maintained desirable upward pressure on export prices. West Kootenay Power and Light pointed out that the guideline forced the exporter to examine the purchaser's alternatives.

Fraser Incorporated and Maine and New Brunswick Power which export to subsidiaries, said that the guideline should not apply to their types of operation and suggested that they be relieved of the necessity to respond to the guideline.

The Ontario Ministry of Energy favoured retention of the third price guideline, in principle, while Québec and British Columbia felt it should be dropped.

4.3.2 Comments of the Hearing Panel

The Panel thinks that the objective embodied in the third price guideline, namely that exporters should seek full market value for Canada's electricity exports, remains as valid today as when the guideline was introduced.

The issue is whether federal administration of the third price guideline assists in achieving the objective. It would if there were a divergence between the utility and the national interest in earning the highest achievable export prices in the market place, or if there were factors beyond the control of the utilities preventing them from doing so. The feasibility of meaningful regulation using this guideline is also a relevant consideration.

The Panel perceives four circumstances in which the utility and the national interest may diverge in the objective of earning full market value for electricity exports. These are:

- the practice of non arm's-length transactions;
- the provision of discounts to penetrate new markets;
- the provision of discounts to take market share from other Canadian exporters; and
- trade policy perceptions.

As all major exporting utilities are provincially owned and as there is no record of evidence suggesting non arm's-length transactions, the Panel finds that this is not a substantive regulatory concern.

If utilities offered temporary price reductions relative to full market value to penetrate new markets, there is an expectation that such strategies will bring future benefits. The Panel believes that this is primarily a matter of utility business judgement. (It is important to distinguish the price reductions referred to here from the issue of price rebates in connection with the second price guideline. In that case the question is whether price reductions, or rebates, offered to utilitites in the U.S. should also be offered to economically-accessible Canadian utilities.)

Price competition between Canadian utilities for market share may drive certain export prices below those obtainable if the utilities were constrained in their discounting practices by the regulatory requirement of the third price guideline. Price competition may substantially increase the market share and total revenue of the discounting utility at the expense of its competitors. In the absence of discounting, however, the total revenue collectively earned by the utilities could be higher.

In principle, this is a case for maintaining the third price guideline.

In sum, apart from the issue of inter-utility competition for market share, the Panel finds little convincing concern that the federal and the utility interest diverge materially in achieving full market value for electricity exports. Nor does the Panel perceive there to be major factors preventing the utilities from achieving full market value. There is no evident imbalance of market power between Canadian exporters and their customers, nor are there any U.S. regulatory and policy impediments to balanced negotiations between them which necessarily warrant whatever counterweight the third price guideline may provide.

U.S. interests may perceive that the third price guideline prevents underpricing of Canadian power, or they may view it as a technique of predatory pricing. Therefore, its possible value in dispelling accusations of unfair trade is ambiguous.

Finally, the Panel notes the practical difficulty of meaningful regulation using the third price guideline for at least two reasons. First, there are unique features to particular transactions which might warrant an export price less than the value of the energy in the importer's market. Second, the exported power may be displacing the need to construct U.S. capacity, the cost or value of which is judgemental. In these cases it is difficult to assert that the judgement of the regulator is superior to that of the utility actually negotiating the price.

For all of these reasons, the Panel finds that the third price guideline may be a dispensable element of electricity export regulation, unless it were judged that inter-utility price competition for the export market would be particularly detrimental from a Canadian perspective and the third price guideline would effectively eliminate it.

4.3.3 Options

The Panel sees two main options.

(i) Maintain the Status Quo

This would retain the benefits, lost under option (ii), accorded the bargaining position of a Canadian utility as a result of the existence and application of the third price guideline. As well, whatever benefits may arise from disclosure of market intelligence at a public hearing would be retained.

(ii) Delete the Third Price Guideline

This option would reduce the federal regulatory burden on utilities and would allow them greater discretion in export-pricing.

A disadvantage of this option is that the benefits accorded the bargaining position of a Canadian utility by dint of the existence and federal application of the third price guideline would be foregone. A further negative effect may be the loss of any benefits garnered through the disclosure of U.S. market intelligence at a public hearing.

4.4 Export Price Floors

Utilities have on occasion applied for export licences where the price for the energy to be exported has not been established at the time of the hearing. Examples of such exports are classes of interruptible energy for which prices may be determined by an operating committee of utility personnel charged with implementation. In most cases where no specific prices have been included in contracts, the export has been hydro energy, for which incremental costs are low, and where the buyer has low-cost alternatives.

In such circumstances it has been the Board's practice, in satisfying itself that the price for such exports is fair and reasonable, to condition the export licences with price floors. The objectives of such price floors are to ensure that all costs incurred by the exports are met (the first price guideline) and to ensure, in cases where the incremental cost of production is very low, that the prices charged are not substantially different from the purchaser's least-cost alternative (the third price guideline).

Although not specifically identified by the Board as an issue the matter of export price floors was raised by some interested parties during the hearing.

4.4.1 Views of Submittors

The B.C. Government and B.C. Hydro were the only intervenors to comment on price floors. The former complained that the Board had been incon-

sistent in setting floor prices for B.C. Hydro. In some cases the Board has used the incremental cost plus a margin, which resulted in a floor price approximately equal to the lowest market price. In other cases the floor price has been defined as the opportunity cost of gas for thermal energy sales in the exporting province. The B.C. Government further stated that it considered the appropriate floor price for interruptible sales to be the incremental cost of hydro energy and for firm exports the contract price to large domestic industrial customers. It proposed that the Board devise a more flexible approach.

B.C. Hydro proposed that floor prices be eliminated since they quickly become outdated, may prevent sales in competitive (low price) markets, and may become a target price for potential buyers.

4.4.2 Comments of the Hearing Panel

The Panel thinks that where prices are set out in a contract, these prices should be included as minimum prices in the licence. Where no price is set by a contract, the Panel feels that the Board should establish a minimum price at least to satisfy the first price guideline. Whether floor prices are required in some cases to satisfy the third price guideline obviously depends on whether this guideline is maintained in the future.

4.4.3 Options

The Panel sees two main options.

(i) Maintain the Concept of Floor Prices

Where the price of energy proposed to be exported has not been fixed at the time of the hearing the Board would establish, through licence conditions, a minimum price below which the energy could not be exported. The floor price should at least satisfy the first price guideline and in certain situations the third. This could be a fixed minimum price, a formula, or a market-derived price. If a fixed minimum price is used the Board could condition the licence to provide for changes within stated limits with the Board's approval without resubmission to the Governor in Council.

Maintenance of the concept of floor prices would not be opposed by industry, with the possible exception of B.C. Hydro.

(ii) Abandon the Concept of Floor Prices

Where prices are determined, for example by an operating committee of officials of the transacting utilities, or by a formula which does not assure a price above cost or near the market price level, the Board would have no assurance that the export price is just and reasonable or that after the licence is issued the exporter would continue to respect the first and third price guidelines for those exports. The Board would effectively be relying on the decisions of the operating committee to satisfy the Board's requirements. However, the amount of energy for export for which a floor price would be needed is small, and in almost all cases would be classed as interruptible. No utility, but some of the consumer-oriented organizations, would object to the abandonment of the floor price concept.

Chapter 5
Licence Terms

Section 85 of the *National Energy Board Act* limits the duration of licences to twenty-five years from the commencement of the export. There did not appear to have been an explicit rationale for this limit. It may have been chosen to be similar to the licence limit on gas exports. In that case the twenty-five year period was selected primarily to allow for the amortization of capital expenditures incurred in building pipelines. When the Board was established, it was envisaged that only in exceptional circumstances would licences in excess of one year be approved for electricity exports. This changed in 1963 with the Statement of National Power Policy which, as earlier discussed, supported long-term electricity exports from Canada in certain instances for periods of up to twenty-five years. The twenty-five year period remains the maximum for which the Board is authorized to issue an export licence.

The Panel notes that in administering the Act since 1959, there has been only two occasions in which an applicant has requested and was granted an export licence of twenty-five years duration. This first occasion was in 1963 when the Board granted the Maine and New Brunswick Electrical Power Company, Limited a licence for firm exports of up to 42 MW to enable it to redevelop its Tinker Hydro Plant in New Brunswick for exports to the Maine Public Service Company. The second occasion was in 1965 when the Board granted a licence to Ontario Hydro to supply up to 3 MW of firm power to The Power Authority of the State of New York.

The Board recognizes the changing circumstances of the electricity export trade; there are now proposals to build large generating facilities dedicated to long-term firm exports. It therefore sought the views of interested parties on whether the current twenty-five year limit ought to be changed and, if so, what limit, if any, should be imposed.

5.1 Views of Submittors

Most major utilities including Ontario Hydro, Hydro-Québec, New Brunswick Power, Maritime Electric, Manitoba Hydro, and Alberta Power, as well as the Québec Government, took the position that the twenty-five year licence limit is arbitrary and that the Board should have the authority and flexibility to decide each case on its merits. The reasons for this position included giving Canadian utilities greater negotiating flexibility for long-term exports and improving the economics of export proposals, especially those which would replace U.S. alternative generating facilities. Also, in some cases, the lifetime of the financing instruments necessary to support the dedicated facility might exceed twenty-five years.

Nova Scotia Power took the position that the Board should have the flexibility to exceed the limit but that the licence term should be the lesser of the sale contract term or the economic life of the dedicated plant. Ontario Hydro suggested that, for dedicated export facilities, an appropriate criterion could be the lesser of the life of the dedicated facility built in Canada or the life of the facility in the U.S. being displaced by the export contract. TransAlta thought it appropriate to retain the present twenty-five year limit but, in addition, that the Board have some mechanism whereby it could consider licence terms in excess of twenty-five years. Mr. Bell, on the other hand, stressed that to maintain the best export prices, long-term exports may be required. He recommended that the maximum licence term be raised to thirty-five years, to correspond to the economic life of replacement facilities in the U.S. The Sierra Club also noted that in special circumstances, such as border accommodations, an export licence in excess of twenty-five years would be warranted.

Submittors who favoured maintaining the current twenty-five year licence limit included B.C. Hydro, Saskatchewan Power Corporation and the Governments of Ontario and British Columbia. They generally saw no compelling reason to extend licence terms beyond the twenty-five year limit. The principal arguments in support of their position were the uncertainty and difficulty in forecasting load and energy balances into the future and the downside risks in case the forecasts

were wrong. In addition, they submitted that the current twenty-five year licence limit provided sufficient flexibility to accommodate any foreseeable export opportunities. However, B.C. Hydro stated that it had been persuaded that the increased flexibility provided by a limit of at least thirty-five years would be desirable in those cases where an export contract could displace a thermal plant for its lifetime.

Several submittors, including Newfoundland Light and Power and West Kootenay Power and Light, argued that if the Board were to have authority to issue licences for longer than twenty-five years then there should be a requirement for a periodic review of the export after a number of years, say five to seven years. The Northwest Conservation Act Coalition submitted that even within the current limit, any export contract of twenty-five years duration might be reviewed after five or ten years and, if agreeable to all parties, be replaced by a new twenty-five year contract. The reason given for a periodic review was that changing circumstances make it difficult to protect the Canadian interest.

Some submittors expressed their views separately on the term of licences for firm exports from existing facilities. B.C. Hydro suggested that, for terms of up to ten years, the utility would be ready to demonstrate to the Board periodically that sufficient surpluses are available to satisfy the contract volumes for such exports. The B.C. Government, on the other hand, suggested a maximum licence term of fifteen years in these cases. The Sierra Club of Western Canada submitted that licence terms of up to five years be allowed for inter-utility sales from temporary surplus while Energy Probe recommended a ban on all contracts of five or more years duration which are based on the importing utilities' costs.

For exports of interruptible energy, West Kootenay Power, B.C. Hydro and the B.C. Government suggested that there be no limit on licence terms. They argued that, since these exports can be terminated at any time, there was no commitment by the parties and hence no need for a limit.

5.2 Comments of the Hearing Panel

The Panel notes that, although the views of submittors varied considerably, the issue of the terms of export licences in general was not controversial.

The Panel found it difficult to establish an analytical basis for determining a maximum duration. It recognizes, however, that governments and the public have been concerned that Canadian energy resources not be alienated for very lengthy periods. This suggests that a specific maximum term for export licences be maintained.

The Panel also notes that key issues raised in respect of licence terms, such as uncertainty about the future evolution of economic and technical factors, relate more to the conditions of contracts than to the duration of licences. Changing the limit on licence term will, therefore, not necessarily change the nature of those risks and uncertainties.

The extreme proposals of submittors would eliminate the maximum licence term for exports and provide the Board with authority to set the duration on a case by case basis. In these circumstances potential exporters could pursue export deals from dedicated hydro plants for very long periods, perhaps in excess of fifty years.

The Panel notes that, if dedicated plants are built solely for export purposes they might be treated as separate from the utilities domestic network facilities. As such they would not form part of the utility's intra-province supply options and length of licence term would not be an issue.

The Panel recognizes that maintaining the present export licence limit might arbitrarily constrain some export options. Export proposals most affected would be those where exports are intended to replace alternative U.S. thermal generation for the economic life of the plant, usually about thirty-five years. This situation could be rectified if the present export licence limits were increased to thirty- five years.

With respect to the suggestions that long-term exports be subject to periodic reviews to protect the Canadian public interest, the Panel notes that such an approach would carry with it some risks. Purchasing utilities also would likely insist on similar reviews and this would permit them to walk away from any long-term contract before its ultimate expiry date. Exporters might then find themselves with expensive excess capacity and few market opportunities. In addition, the Panel notes that any requirement for mandatory periodic review could also result in the lowering of the export price, since the value of the product to the purchaser

would likely be diminished by the mere existence of the review requirement.

Turning now to the question of maximum limits for exports from existing facilities, and the suggestion that terms from five to fifteen years be applied, the Board now has the power to impose such limits as it sees fit and the Panel sees no need to embed specific limits for such exports in the Act.

Some submittors argued that interruptible exports be allowed without limits on the terms. The Panel has difficulty in agreeing that exports should be approved that continue indefinitely. There are many degrees of interruptibility in energy transactions, ranging from the day-to-day economy energy exchanges to the very constrained limits associated with long-term blocks of interruptible export sales. There may be good reasons to allow utilities to engage in day-to-day economy energy exchanges without licence limit. However, for exports of blocks of energy, the specific terms and conditions in those contracts will define the level of interruptibility accorded to the seller. Accordingly the licence term considerations for such exports could be similar to those for firm exports.

5.3 Options

The Panel sees three main options.

(i) Maintain the Twenty-five Year Limit

Although only one twenty-five year export licence has been approved to date, the Panel notes the existence of several proposals for building facilities dedicated to export.

If the term limit on export licences remained unchanged, it could constrain export proposals based on building dedicated plants to replace U.S. alternative generation. Such export proposals may require terms up to the economic life of the replacement facilities in the U.S., about thirty-five years.

(ii) Amend the Act to Increase the Maximum Term of Export licences to Thirty-five Years

Under this option, the limit on the term of export licences would be maintained but increased to thirty-five years. Most exporting utilities, especially those contemplating long-term exports from dedicated facilities based primarily on replacement of U.S. alternative generation, would favour such an amendment. Although a limit on the term of export licences would still be retained, thirty-five years would, for all intents and purposes, encompass most if not all export proposals currently being contemplated. Exceptions would be hydro export developments which, because of their duration and impacts on rivers and lands in both countries, would require treaties between the Canadian and U.S. governments. Two such examples are the Columbia River Treaty and the Skagit Valley Treaty.

(iii) Amend the Act to Eliminate the Limit on Terms of Exports

Under this option the applicant would have maximum flexibility to request, and the Board would have maximum flexibility to examine and approve, any export proposal irrespective of the term of the contract. This option does not imply that the Board would approve exports that could continue indefinitely but rather that it could set any appropriate limit to the term of related export licences.

A variant of this option is to maintain the twenty-five year period and allow it to be exceeded if the Board determined that it was in the public interest.

This option would be supported by most exporting utilities; it would give them maximum flexibility to negotiate export deals unconstrained by legislated limits on licence terms. Some utilities and many public interest groups and associations would oppose this option. It could create a perception that the federal government is unconcerned about the disposition of Canada's electric power resources to the U.S. In particular, export contracts of very long duration (fifty to sixty years, for example) might be perceived by the public as an unduly long alienation of a Canadian resource. This option could require regulators to carefully justify the licence terms especially for very long-term export arrangements.

Chapter 6
Transmission Access For Export Purposes

Situations can arise in which Canadian utilities with surplus power to export do not have direct transmission access to U.S. markets. Access may then only be possible through the transmission facilities of other Canadian utilities or by construction of separate power transmission facilities traversing another province en route to the U.S. The Board asked interested parties for their views on the considerations that should be taken into account in respect of transmission access for the specific case where one Canadian utility must have access to the transmission facilities of another if the first is to realize its export potential.

Some interested parties also expressed views on gaining access to U.S. markets by means of Section 90.1 of the Act. This section states:

> "The Governor in Council may by order designate any facility that is to be constructed and operated for the purpose of transmitting power from a place in a province to a place in Canada outside that province as a facility to which the provisions of sections 20, 40 to 45, subsection 46(1) and sections 47 to 49 shall apply and, where any such designation is made, those provisions shall apply in respect of the designated facility and the expression "international power line" wherever it appears in any of those provisions shall in each case be read as including a reference to the designated facility."[1]

6.1 Views of Submittors

Views on this issue ranged from strong opposition to any NEB involvement in transmission access between or through interconnected utilities to strong support for such involvement. Parties opposing increased Board authority in this area included major exporters and their provincial governments. Of the remaining utilities that expressed views on this issue, most favoured increasing the Board's authority.

Most parties who were opposed to increasing the Board's authority to order transmission access, felt that utilities which own transmission facilities should have the authority to decide how those facilities should be used. They said that transmission access to allow for wheeling of exports should be freely negotiated between the parties concerned. Hydro-Québec felt that it would be unjustified and unfair to force a utility that had assumed the economic and financial risks associated with construction and operation of these types of facilities to provide transmission access to another utility, especially by some arbitrary process.

N.B. Power, Ontario Hydro, and B.C. Hydro, all exporting utilities, stated that their transmission networks were a limited resource and that transmission access should only be provided to the extent that the risks and costs were shared. B.C. Hydro and N.B. Power also argued that a province's proximity to market was as much a provincial natural resource as was the geology and topography which supplies the source of energy to be sold. Provinces, therefore, should exercise control over use of that resource. Ontario Hydro added that the primary use of its transmission system should be to serve domestic loads and that domestic market inter-utility transactions should be given priority over the use of its facilities by others for wheeling power to export markets.

The Ontario Ministry of Energy stated that Section 90.1 of the Act was inappropriate and should be withdrawn and that transmission access should be by mutual agreement subject only to provincial government approval. The Government of Québec concurred with this view.

Among the non-exporting utilities, those in Newfoundland and Alberta felt that transmission access was a key issue. They argued that the Board should have authority to regulate inter-utility transfers and wheeling over interprovincial pow-

1. National Energy Board Act, S.C. 1980-81-82-83, C.116, S.32

er lines in the same way that it currently exercises jurisdiction over interprovincial pipelines. They stated that section 90.1 of the Act was inadequate to address the issue of transmission access, and that the Board should be given the necessary authority to order an intervening utility to provide transmission access to a utility in another province, provided that the intervening utility was fully compensated for all its costs. Full compensation for all costs should not, in the view of these utilities, include compensation for lost opportunity costs associated with the loss of possible export markets. These utilities generally felt that, if the Board had increased authority with respect to transmission access, substantial deregulation would be possible in other areas. Newfoundland and Labrador Hydro went further by stating that a utility that refused to grant transmission access or wheeling to another, should be restricted from taking advantage of export markets.

Another non-exporting utility, Maritime Electric, suggested, as a minimum, that the powers that rest with the Board under section 90.1 be retained. It added that it felt this section provided an opportunity for Maritime Electric to gain access to energy sources other than those immediately adjacent to Prince Edward Island. However, it felt that the negotiation of a satisfactory wheeling arrangement would be preferable to the construction of new and separate transmission facilities through another province.

The only other submittors that expressed views on this subject were Energy Probe, the Sierra Club and the PC Opposition Caucus of P.E.I.. Energy Probe stated that it believed the NEB should have a role in regulating spare transmission capacity on provincial electricity grids so that it could be used by the utilities of other provinces. The Sierra Club felt that utilities should negotiate transmission access; only as a last resort should a body such as the NEB order a utility to provide access to another. The PC Opposition Caucus of Prince Edward Island suggested the formation of a national policy to provide power corridors allowing Canadian consumers access to lower cost electricity from other regions as well as allowing producers equitable access to markets.

6.2 Comments of the Hearing Panel

The basic issue is that utilities lacking direct access to desirable U.S. markets may not be allowed to reach those markets by crossing the neighbouring province's territory or using the neighbouring utility's transmission facilities.

There are two ways in which utilities without direct access to export markets could seek to gain such access.

- A utility may seek access to the transmission facilities of another for the purpose of having its surplus wheeled through the utility's facilities to an export market.

- Alternatively, a utility may gain transmission access to the export market through a purpose-built line which would traverse another province.

Before considering each of these situations individually the Panel believes it important to make several general observations.

The Panel rejects the premise that geographic location should bar access to export markets and thus limit competition. The Federal Government's position on matters of interprovincial and international trade is clear: it endorses the principle that to the maximum extent feasible, commerce in goods and services should be unconstrained by provincial (or international) boundaries. This principle applies equally to electric power as to goods and services. At the same time, it has to be recognized that the electric power networks of provincial utilities were developed initially to meet in-province needs and only later to serve their out of province commitments. In this respect, these power networks contrast with other means of transporting goods and services such as interprovincial pipelines, railways and telephone lines.

These principles are clearly enunciated in the Statement of *National Power Policy* and in the *NEB Act*, including section 90.1, and apply universally to all regions of Canada. One of the main objectives of the *Statement of National Power Policy* was to provide a climate for the development of electric power systems in Canada. To do this, the Government of Canada said that it would encourage the building of new interties in order to realize the interconnection benefits that could accrue through coordinated systems operations and electricity trade with the U.S.

The Panel believes that it was never the intention of the federal government to reserve international

trade in electricity only to those provinces whose utilities have direct access to U.S. markets. If geographic location alone were used to prevent a utility from exporting electricity by the most economic route, it would be an exercise of monopoly power contrary to the public interest.

(i) Transmission Access to Wheel Electricity Exports

The Board does not have authority to order transmission access for the purpose of wheeling power for exports. Utilities themselves must seek this type of transmission access through voluntary negotiation. Many exporting utilities and their provincial governments advocated maintaining the status quo. In current circumstances, however, it appears to the Panel that the strength each party brings to the bargaining table may weigh in favour of the wheeling utility as witnessed by an exhibit submitted by TransAlta. In that exhibit, B.C. Hydro made it clear that it would not be prepared to discuss with TransAlta the question of granting transmission access for wheeling power and energy for export purposes because of concerns about possible loss of market for B.C. Hydro.

Wheeling of Firm Exports

If transmission access were to be mandated for the wheeling of firm exports, a number of technical, economic and financial questions would arise.

- Does the utility providing the wheeling service have spare transmission capacity or would some transmission network reinforcements be required?

- What financial arrangements should apply in cases where additional transmission facilities are required?

- What are the appropriate wheeling charges?

- Should charges include compensation for the wheeling utility's "lost opportunity" in the export market, if any?

The Panel believes that the primary responsibility should be on the utilities involved to negotiate wheeling agreements. However, it may be desirable to introduce regulatory changes which would provide authority that, failing such agreements, utilities could seek to have their power for export wheeled over transmission lines which were built and paid for by others to meet their own domestic requirements and firm out of province commitments. If such were provided, utilities requiring wheeling services for export purposes would have to be prepared to pay the full costs incurred. These regulatory changes could have immediate effect or their implementation could be delayed to allow access negotiations to take place without a perception of government duress on the wheeler.

The Panel notes that, because electricity flows through a path of least impedance, it would not likely be possible to confine power wheeled for exports to a particular line on the wheeling utility's system. Rather, the wheeled power would flow through many circuits within the network. This could cause technical difficulties creating costs for the wheeling utility. It would be reasonable to expect recovery of these costs from the party whose power is being wheeled. If the utilities involved failed to agree on the cost of service, and it was the Board which had directed that wheeling arrangements be developed, the Board would have to be empowered to adjudicate unresolved issues between the utilities.

The Panel notes that, while some of the specific wheeling costs can be quantified with certainty, others cannot. Whether compensation for "lost opportunity", or any other charges, should or should not be included in any wheeling agreement is now a matter for negotiation between utilities.

The Panel believes that a major stumbling block to concluding wheeling arrangements for electricity exports is the question of compensation for the "lost opportunity" to the wheeling utility if such services were provided. Exporting utilities generally favoured such charges while those seeking transmission access for export wheeling purposes stated that there should be no compensation related to the loss of possible export markets.

The Panel observes however that, if the wheeling utility insists on a level of compensation for "lost opportunity" which effectively destroys any economic incentive for the utility seeking transmission access, that alone can effectively bar access to the export market.

Extending federal regulation into the area of transmission access for wheeling of exports would likely significantly increase, rather than simplify and reduce, the regulation of electricity exports. It is a matter of government policy to determine

whether the purpose it would serve is desirable, and if so whether regulation is the most appropriate avenue to achieve the desired end.

If the Board had the authority to order one utility to wheel power for another utility through its system for export purposes, it could cause legal and jurisdictional complications. Authority to mandate wheeling for exports could require powers for the Board to approve:

- the quantities of power and energy to be wheeled;

- the wheeling charges necessary to conclude such arrangements, including any appropriate provision for "lost opportunity".

Wheeling of Interruptible Exports

The Panel believes that the situation for wheeling of interruptible exports is different from that of wheeling of firm exports. The technical problems are minimal since the wheeler can control the power flow through his system at all times to respect any operational limits that may be required.

The Panel believes that utilities should negotiate freely and seriously to conclude wheeling arrangements for interruptible energy exports. At present some seventy percent of all exports to the U.S. are in this category. The Panel also believes that there can be opportunities for interruptible exports by both the wheeler and the party requesting wheeling, without appreciable costs to either party and with economic benefits to Canada as a whole.

(ii) Transmission Access to the Export Market Through a Purpose-Built Line

Under present circumstances, if utilities fail to agree on transmission access to allow for wheeling of power exports, a utility having an exportable surplus but no ties to the U.S. market might gain access through the construction and use of a purpose-built line traversing an adjoining province. In that case, the issue would be whether a utility could obtain a separate corridor to build and operate such a power line.

The Board now has jurisdiction over international power lines which are defined in the *NEB Act* to mean facilities constructed or operated for the purpose of transmitting power from or to a place in Canada to or from a place outside Canada. This would appear to cover export-dedicated lines originating in one province and traversing the territory of another province en route to the export market. Accordingly, any utility wishing to construct such a purpose-built line for exports through an adjoining province could apply to the Board for a certificate of public convenience and necessity.

If it were found to be in the public interest to do so, the Board could grant the authorization sought and approve the detailed route. Land acquisition and compensation matters would be handled in accordance with the provisions of the *NEB Act* (these are briefly discussed in Appendix IV). It would be open to the utility holding a certificate of public convenience and necessity to proceed with construction upon obtaining the necessary lands or, alternatively, upon obtaining right of entry orders from the Board. Section 75.26 of the *NEB Act* gives the Board the power to "issue an order to the company granting it an immediate right to enter any lands on such terms and conditions, if any, as the Board may specify in the order".

The Panel recognizes the political and practical implications inherent in the concept of constructing a purpose-built line for exports through an adjoining province. It would be preferable that the construction of such export-oriented facilities be undertaken with the agreement of interested utilities and provincial governments. However, if such facilities meet the definition of an international power line in the *NEB Act*, they are subject to final regulatory approval by the Board.

Some interested parties expressed the view that such facilities should be subject only to provincial government approval. The Panel does not agree with this view. The *Constitution Act, 1867* gives the Parliament of Canada jurisdiction over international power lines. If the current definition of an international power line is not intended to cover the situation of export-dedicated lines traversing adjoining provinces, the Act should be amended to clarify the definition.

The Panel notes that some parties saw Section 90.1 as providing them with some assistance in acquiring transmission access for export purposes.

Section 90.1 allows the Governor in Council, not the Board, to designate any facility to be constructed for the purpose of transmitting power from a place in a province to a place in Canada outside that province as a facility to which certain provi-

sions of the *NEB Act apply*. If a facility were so designated by the Governor in Council, it would be up to the proponents of the facility to make application to the Board. Only then would the Board become involved in certificating the line and approving the detailed route. Land acquisition and compensation matters would be handled under the provisions of the *NEB Act*.

In the Panel's view, Section 90.1 of the Act clearly applies to lines to be constructed for the purpose of interconnecting utilities in two adjacent provinces or utilities in two provinces through an intervening province. However, it is not clear whether it also applies if a utility wishes to build a line for the purpose of serving export markets through an adjacent province. If this were also its intent, it might be desirable to clarify the wording of this section accordingly. It may be that Section 90.1 was not intended to cover an export-dedicated transmission line traversing another province en route to the export market in light of the fact that the current definition of an international power line appears to provide for NEB jurisdiction in such a situation.

While it would be desirable to have utilities voluntarily negotiate transmission access for export purposes, if the general observations relating to the question of access as set out above are accepted, it is the Panel's view that it is necessary and desirable in the public interest that the Board have the power, perhaps as a last resort, to authorize construction of an export-dedicated line traversing another province.

6.3 Options

The Panel sees a number of main options relating respectively to the wheeling of exports and to access to export markets through a purpose-built line. These options are not mutually exclusive.

(i) Amend the Act to Provide for Federal Regulation of Transmission Access to Wheel Electricity Exports

Under this option the Board would exercise jurisdiction over electric utilities to the extent necessary to order and control transmission access by another utility for the purpose of wheeling electricity to export markets. It would have the power to order wheeling and, failing satisfactory negotiation of terms, would be able to specify the terms and conditions. This would require changes to the Act.

Presently exporting utilities and their provincial governments would oppose this proposal while some non-exporting utilities and their provincial governments would see this as the only means to gain access to export markets.

The powers of the Board would have to be extended to cover approval of quantities to be wheeled and the related financial considerations. It would be left up to the utilities to decide what modifications to their systems would be required.

This could result in an increase in NEB regulation of the Canadian electric utility industry.

(ii) Amend the Act to Allow for Federal Regulation of Transmission Access to Wheel Electricity Exports but Provide for Relevant Sections to be Proclaimed at a Later Date if Utilities Fail to Reach Agreement

This option is similar to option (i) except that the intent would be to hold the provisions in reserve to be used only in the absence of agreement among utilities.

Adopting this option would respond to the concern of non-exporting utilities wishing to gain access to U.S. markets. It would signal to any prospective wheeling utility, presently unwilling to negotiate on a reasonable basis, that federal authority exists to order wheeling of exports if required. It would also respond to the government's *Regulatory Reform Strategy* that states "regulation should not be used unless there is clear evidence that a problem exists and unless the benefits of regulation exceed costs".

(iii) Retain the *Status Quo*

The Board would continue to rely on the utilities to negotiate transmission access agreements for the wheeling of electricity for export purposes. Potential Canadian exporters who do not have direct transmission access to U.S. markets and who are unable to reach agreements with utilities in neighbouring provinces could seek to construct a purpose-built line through an adjoining province to access those export markets. This could be done by making application for approval of an international power line as defined in the *NEB Act* or possibly by seeking to obtain Governor in Council designation of the proposed line under Section 90.1.

This option requires no change to existing legislation, regulations or practices. However, as noted there may be some uncertainty as to the applicability of the existing legislation to an export-dedicated transmission line traversing an adjoining province.

Major exporting utilities would oppose any intervention by the federal government in the regulation of any such purpose-built lines traversing another province. On the other hand, non-exporting utilities would favour national regulation of this form of transmission access, if only as a last resort.

(iv) Amend the Act to Make Explicit the Board's Jurisdiction Over the Construction and Operation of Export-Dedicated Lines Traversing an Adjoining Province

Under this option, the *NEB Act* would be amended to make explicit the Board's jurisdiction over an export-dedicated line traversing an adjoining province. This could be done either by amending the definition of an international power line to specifically include export-dedicated lines traversing an adjoining province or by amending Section 90.1 to include specific reference to the building of facilities for export purposes. (If Section 90.1 were amended then prior designation by the Governor in Council would still be required.)

(The views of parties with respect to this option would be the same as set out in Option iii).

(v) Amend the Act to Make Explicit that the Board Does Not Have Jurisdiction Over the Construction and Operation of Export-Dedicated Lines Traversing an Adjoining Province

Under this option, the *NEB Act* would be amended to remove from the Board's jurisdiction any such facilities which might fall within the current definition of an international power line or any designated facilities under Section 90.1 related to exports.

It should be noted that any amendments to Section 90.1 contemplated under this option would be limited to designated export-dedicated facilities. The Board does not deal in this report with the question of the desirability of Section 90.1 in terms of interprovincial transmission facilities; such matters are outside the scope of the present inquiry.

This option would be welcomed by most of the major exporting utilities and their provincial governments. Most non-exporting utilities and their provincial governments would view this change as a significant erosion of federal jurisdiction and as a blow to any prospects for access to export markets.

Chapter 7
International Power Lines

The Board's regulation of international power lines stems from the fact that, under the *Constitution Act, 1867*, works or facilities crossing the international boundary are under the jurisdiction of the Parliament of Canada.

Today some 1,300 kilometres of international power lines are certificated by the NEB. In contrast, the total length of all Canadian transmission lines over 20 kV is about 185,000 kilometres. International power lines therefore comprise less than one percent of the total transmission lines in Canada. Of the 95 international power lines in service today, about 60 percent are used for border accommodations or to supply small isolated U.S. loads. Most of these lines are of less than 20 kV capacity and consist of short spans extending across the boundary from a Canadian substation.

Transmission voltages used on the 37 larger international power lines cover the range from 69 kV to 765 kV alternating current and ± 450 kV direct current. Although most of these international power lines are short in length, a number of them extend for appreciable distances in Canada. An example is the 210 kilometre 500 kV international power line from the Dorsey substation near Winnipeg to a point on the international boundary near Sprague, Manitoba.

The *NEB Act* defines an "international power line" as "... facilities constructed or operated for the purpose of transmitting power from or to a place in Canada to or from a place outside Canada.". The effect of this definition is to give the Board jurisdiction over any facilities which must be constructed to connect a Canadian electrical system or a Canadian power plant to a U.S. system or to an isolated U.S. load. In practice the Board usually considers an international power line to be that portion of a line between the international boundary and the closest Canadian substation. Such a substation is normally considered the point of interconnection between the "international" section of the power line and the domestic transmission system.

The statutory requirements with respect to international power lines are set out in Part III of the *NEB Act*. A two-stage regulatory process is involved: first certification and then detailed routing.

In the certification stage, the Board must be satisfied that the line is required by the present and future public convenience and necessity. Applicants are required to provide information on the economic, technical and financial feasibility of the proposed line, including any socio-economic considerations and environmental impacts associated with the proposed general route. At the conclusion of the certification stage, the Board issues a certificate which specifies, inter alia, the general location of the line.

Before the line may be constructed, the applicant must obtain approval of the detailed route. In the detailed route stage, landowners are informed of the proposed detailed route, and persons objecting to the route have the opportunity to make representations to the Board at a public hearing.

Where a company has determined that lands may be required for an international power line, the company is required to notify the landowner and seek to enter into a land acquisition agreement in accordance with the provisions of the *NEB Act*. If the company and the owner cannot agree on the amount of compensation payable under the Act for the acquisition of the lands or for damages suffered, the parties may resort to the negotiation and arbitration procedures under Part V of the Act. These provisions of the Act are administered by the Minister of Energy, Mines and Resources. It should be noted that section 75.26 of the Act gives the Board the authority to issue an order to the company granting it an immediate right to enter lands required for construction of the international power line.

An important component of the Board's regulatory process is the requirement for public hearings at both the certification and detailed-routing stages.

These hearings provide interested parties and affected landowners an opportunity to question project proponents and to make their concerns known directly to the Board. In the case of detailed-route hearings, landowner participation is particularly encouraged; hearings are held in the affected area; directly-affected landowners receive personal notifications; and interested parties are entitled to receive compensation for representation at the hearing.

Section 49 of the *NEB Act* permits the Board to exempt international power lines not exceeding operating voltages of 50 kV from the requirements of the certification and detailed-routing process.

7.1 Views of Submittors

The major concern of submittors was that the Board's exercise of its powers overlaps with provincial regulation. Submittors expressed views on the issue of federal and provincial regulatory overlap in terms of their views on the definition of international power lines and on the role they thought the Board should play in the certification of international power lines. They expressed a particular concern on the perceived overlap in the areas of environmental assessment and detailed routing.

(i) Definition of an International Power Line

Although a number of submittors suggested the definition of an international power line needed to be clarified, only a few had specific suggestions on how this could be achieved. The Ontario Ministry of Energy felt that the existing definition confuses the jurisdictional picture regarding the transmission of electricity within provinces on the one hand and international sales transactions on the other. It suggested that by definition the length of power lines "should not exceed 1 km from the international boundary".

Several submittors, including the Nova Scotia Power Corporation and B.C. Hydro, suggested that the definition should restrict the line to a section extending from the international boundary to the first substation. TransAlta suggested that this definition be extended to deal with the situation where access to export markets requires the building of transmission lines through an adjacent province. To cover such cases, the definition should include those facilities which traverse a province between the exporter and the international boundary.

Some of the environmental protection groups felt that the Board's jurisdiction over international power lines should extend to certificating export-dedicated generating facilities. They argued that provincial governments were generally the principal proponents of such projects and, as such, could not be relied upon to conduct an unbiased approval process. SVP noted that, in Québec, there was no effective mechanism allowing for public participation in the approval process and that, in the absence of an NEB hearing, there would be no adequate forum in which private citizens could make their views known. SVP also noted that the debt burden associated with investment in mega-projects could have serious negative consequences on provincial economies.

Most utilities and provincial governments argued that the Board should not have a role in certificating the construction of export-dedicated generating facilities. Approval of generating facilities, with the exception of nuclear power facilities, was seen solely as a provincial responsibility. The Board's role was seen to be limited to approving export licences. A number of the utilities, including B.C. Hydro and TransAlta, also suggested that in most, if not all, cases so-called dedicated facilities would actually be facilities required for future domestic needs which were advanced to serve the export market. TransAlta acknowledged that if a generating facility were truly export-dedicated, then it might be appropriate to consider it as part of an international power line under the Board's jurisdiction.

(ii) The Board's Role in Certification of International Power Lines

N.B. Power felt that the NEB should continue to have a role in ensuring that new international power lines do not adversely affect either the technical operation of any existing interprovincial or international interconnection or the internal generation and transmission network of any interconnected system. It stated that the Board should request evidence from applicants to demonstrate that a proposed interconnection or export would not impact negatively on others.

Ontario Hydro stated that consideration of the technical and economic implications of new international power lines on interconnected Canadian utilities was a valid area of concern for the Board but the onus for demonstrating such impli-

cations should be on the potentially affected Canadian utilities.

Manitoba Hydro and the Manitoba Deputy Minister of Municipal Affairs recommended that the Board continue to certificate the technical and financial aspects of international power lines but not the environmental and right-of-way aspects.

Both B.C. Hydro and Hydro-Québec, as well as their provincial governments felt that, within their respective provinces, the province should have sole jurisdiction for certification of international power lines. Both of these provinces also stated that there is overlap between the NEB's certification process and their own processes. They thought their processes adequately dealt with the requirements for certification of international power lines. B.C. Hydro also stated that, should the Board retain authority over technical aspects of international power lines, the only information applicants should have to file would be evidence that the neighbouring utilities are satisfied that relevant technical criteria are met.

A number of utilities, including Hydro-Québec, Manitoba Hydro, B.C. Hydro and the Nova Scotia Power Corporation felt that the technical implications of new international power lines could best be examined by the relevant reliability councils in concert with the concerned utilities. It was suggested by these submittors that the Board should simply accept the technical solutions or the reliability criteria agreed upon by the relevant reliability councils and the affected utilities.

The Ontario Ministry of Energy expressed the view that international sale transactions are the subject of the Board's jurisdiction and that the transmission of electricity within provinces and the environmental regulation of all transmission line rights-of-way are solely matters of provincial interest.

Energy Probe recommended that international power lines should generally fall under provincial jurisdiction except in cases of clear federal responsibility, such as where native rights or nuclear energy are involved or where cross-boundary impacts were significant.

The Sierra Club recognized that a certain degree of regulatory duplication presently exists in the regulation of international power lines, but supported the Board's hearing process over public information meetings favoured by many of the provinces, because it was felt that a hearing provided interested persons a full opportunity to examine the project in detail and to question the proponent. The Sierra Club suggested that a means of avoiding regulatory duplication might be for the Board and a province to jointly assess a proposed project, thereby allowing all concerns to be properly addressed without the need for two separate reviews.

Environmental Assessment and Detailed Routing

Submittors were generally of two views on the question of NEB involvement in environmental assessment and detailed routing. Most of the major exporting utilities, including Hydro-Québec, N.B. Power, Manitoba Hydro and B.C. Hydro, as well as the corresponding provinces, submitted that NEB regulation of environmental and detailed-routing matters for international power lines duplicates provincial processes which normally occur prior to Board reviews. They stated that the same was true in matters of land acquisition for rights-of-way, compensation and power line safety. Other submittors, in particular some of the public interest groups, expressed the concern that provincial regulations do not provide an adequate level of environmental protection and that the Board should retain its jurisdiction over international power lines.

To eliminate regulatory overlap, the major exporting utilities and provinces generally suggested that the provinces be responsible for the regulation of environmental assessment, routing, land acquisition, compensation and safety of international power lines. Various mechanisms were proposed whereby this might be accomplished.

- B.C. Hydro suggested that the NEB should give up its authority in such matters by transferring its jurisdiction to the provinces.

- Manitoba Hydro stated that the NEB should still issue certificates for international power lines, but that environmental matters, land acquisition and safety should be left to the province.

- The Government of Québec suggested that in order to minimize any unnecessary regulatory overlap, while still ensuring an adequate level of environmental protection, the *NEB Act* could be amended to read,

"Provided the Board is satisfied that the laws and regulations of a province are applied in an equivalent manner to the NEB Act and regulations with respect to environmental protection, the Board may suspend the application of its requirements, given evidence that the approvals of provincial agencies have or will be obtained."

Both Ontario Hydro and the Ontario Ministry of Energy felt that there was a certain degree of overlap between the province and the Board in the regulation of international power lines. They also stated that the province should continue to be involved in the review of applications for all facilities within the province to ensure that an adequate level of environmental protection is achieved. Ontario stated that the NEB process should not be used to circumvent provincial environmental and land-use regulations.

Ontario Hydro further suggested that the exemption limit under Section 49 of the Act could be raised from 50 kV to 125 kV, thus reducing the regulatory burden for small international power lines.

Of the groups and individuals that commented on the subject of environmental and detailed routing matters, Energy Probe and Mr. Bell recommended that the Board relinquish jurisdiction over those matters to the provinces. Mr. Bell stated that, since the provinces adequately regulate power lines, and international power lines constitute only a small fraction of all transmission lines in Canada, the Board should accept provincial jurisdiction over international power lines. To ensure that adequate standards are maintained with respect to environmental matters in all parts of the country, Mr. Bell suggested that federal-provincial accords be established to set standards for environmental assessments.

A number of public interest groups and small utilities were of the view that the Board should retain jurisdiction over environmental and routing matters associated with international power lines. The major concern of public interest groups was that existing provincial legislation and provisions for public participation do not ensure adequate environmental protection.

Newfoundland and Labrador Hydro, Alberta Power and TransAlta also stated that the Board should retain jurisdiction over environmental and routing matters to provide for the possibility of constructing international power lines across other provinces.

7.2 Comments of the Hearing Panel

To assess the appropriate role of the Board in the certification of international power lines it is useful to begin by discussing the extent to which the purpose of such lines differ from those of intra-provincial transmission networks.

The characteristic which distinguishes an international power line is the purpose for which it is built and operated: that purpose is to connect a Canadian electrical system to a U.S. system, or to an isolated U.S. load, for the transmission of power for export.

Intra-provincial transmission facilities are developed principally to transport in-province generation to serve domestic loads with a prescribed level of security and reliability. Internal provincial transmission networks, absent interconnections, do not, of themselves, impact on systems outside the province.

International interconnections permit planning and coordinated operations of the interconnected systems to take place. This includes power exchanges, generation reserve sharing and mutual assistance in the event of emergencies. From a technical standpoint, interties generally improve the reliability and the electrical performance of the interconnected systems.

However, interties can have adverse economic and reliability impacts on other interconnected third parties.

An international power line can adversely affect the performance of neighbouring interconnected Canadian and U.S. electrical power systems. Some submittors have suggested that the NEB need not concern itself with the technical implications of new international power lines since the reliability councils and the affected utilities are in the best position to resolve any technical problems which might arise. However, the Panel notes that technical problems appear to be increasing as more interprovincial and international power lines are put in place and as the power transfers between systems grow. It notes as well that the reliability councils depend for their effectiveness on

the voluntary cooperation of their member utilities.

The Panel thinks, therefore, that it is desirable to maintain federal oversight as to whether potential technical problems associated with new interties are resolved to the satisfaction of all affected parties. Moreover, even if technical problems related to new international power lines were resolved, the new interconnections could affect the transfer capacity between the exporting utility and other interconnected Canadian systems. This could have adverse economic impacts on third parties since opportunities for power exchanges could be reduced.

The Panel therefore believes that it is necessary to ensure that proposed international power lines will not impact negatively on third parties and will recover all of their direct and indirect costs. Because system interconnections have increased substantially in recent years the rationale for some degree of federal regulation of international power lines may be stronger today than in the past.

(i) Definition of International Power Line

A number of parties to the hearing suggested that the definition of an international power line be restricted either to a distance not to exceed one kilometre from the international boundary or to the distance from the international boundary to the first substation. The Panel believes that such definitions, though applicable in some cases, are unduly restrictive in others. For example, a transmission line required to serve the export market and linked to an export-dedicated generating facility that is electrically isolated from the exporter's domestic system should be considered to be an international power line, no matter what its length.

It is the purpose for which the facilities are built that determines whether they should be considered as international power lines. The Panel concludes that the present definition of international power lines in the *NEB Act*, which relates to the purpose of the facility, remains appropriate.

The possibility has been raised that an international power line might be considered to extend from the border back to an export-dedicated generating station and to include the generating station itself. The Panel notes that an international power line is presently defined in the Act in terms only of transmission facilities. Accordingly the definition could not be construed to include an export-dedicated generating station. To date the Board has not had to consider an export application associated with a generating station dedicated solely to export. All cases involving the construction of so-called dedicated generating facilities have involved only some advancement of the construction of facilities which would eventually be required to meet domestic loads.

The Panel found no convincing reasons, nor were any advanced by submittors, to suggest that the question of jurisdiction over generating plants dedicated to export need be considered in this review.

(ii) The Board's Role in the Certification of International Power Lines

The Panel notes the views expressed by some submittors that overlap exists between the Board's certification process and the equivalent provincial review processes and that, to reduce that overlap, the Board should relinquish its jurisdiction over international power lines.

The Panel recognizes that most provincial governments today play an active role in the regulation of generation and transmission facilities, including international power lines, of their respective provincial utilities. It also recognizes that international power lines comprise only a small proportion of any utility's total in-province transmission system.

Nevertheless the federal government has clear regulatory jurisdiction over international transmission facilities and, consequently, it cannot relinquish that jurisdiction. However, if the rationale for some aspects of the Board's certification process is no longer valid, federal action could be taken to eliminate any overlap relating to these aspects, and in particular to environmental assessments and detailed routing.

Environmental Assessments

The Act requires a mandatory public hearing for all international power lines whose operating voltages are greater than 50 kV. Provincial processes for regulation of power lines vary from no public participation to some participation through public information meetings and open houses and, finally, to formal public hearings.

The Panel recognizes that provinces have experience and competence in the assessment and regulation of environmental and land-use issues since they have been regulating intra-provincial transmission lines for some time. Furthermore, the Panel believes that where the effects of transmission lines will remain within the province, there is no difference between the provincial and the national interest.

The Panel believes that the Board could generally accept provincial environmental approvals as evidence that the Board's requirements have been fulfilled.

The Panel further believes that regulatory overlap could be reduced if the limit under Section 49 of the Act were raised to exempt transmission lines having capacity less than 120 kV from the Board's full requirements.

In summary, the Panel believes that there is some opportunity to streamline the Board's procedures by accepting provincial approvals relating to the intra-provincial aspects of an international power line as evidence that the Board's requirements are fulfilled. As a general rule the Board would focus its attention on any extra-provincial economic and system reliability impacts. It would also satisfy itself that all costs including extra-provincial costs would be recovered. Thus the Board's role in certificating international power lines would be more one of examining the interconnection aspects than the physical works associated with the line.

(iii) The Board's Role in Determining the Detailed Route of an International Power Line

The Board's regulatory process provides landowners directly affected by the proposed detailed route of an international power line the opportunity to express their concerns to a federal regulatory agency regarding the specific effects of that line upon their lands. Provincial procedures in respect to detailed routing of transmission facilities vary from province to province.

The Panel believes that there may not be a compelling need for the Board to routinely concern itself with matters relating to detailed-route determination or the physical construction of international power lines. This is due both to the increased provincial participation and capability in electricity regulation and, in many cases, to the lack of any significant difference between the provincial and national interests.

The Panel believes, however, that the Board should retain the power to regulate the detailed route of lines for use in special circumstances. Such authority could be required, for example, in the case of an export dedicated line traversing more than one province.

7.3 Options

The Panel sees a number of main options.

The options dealing with the certification stage of the Board's two-stage regulatory process are described first, followed by those dealing with the detailed routing stage.

Certification

(i) Maintain the Existing NEB Role Respecting Certification of International Power Lines

Under this option, uniform standards would continue to be applied across Canada. All issues would continue to be dealt with, including those which may not be fully considered in a provincial review, such as extra-provincial impacts and concerns bearing on matters of federal jurisdiction such as aboriginal rights or the crossing by international power lines of navigable waters or national parks. The Board would continue to provide a forum for the evaluation of all issues associated with those facilities.

In respect of regulatory overlap in environmental matters, the Board's regulations already give applicants the right to request exemptions to the filing of information not considered relevant or applicable. Such exemptions could reduce environmental information requirements and the regulatory burden.

(ii) Streamline Existing NEB Procedures Respecting Certification of International Power Lines

Under this approach the Board would generally focus its attention on the extra-provincial technical and economic aspects of international power lines. Insofar as intra-provincial aspects of the projects and the actual physical characteristics and construction of the facilities are concerned,

the Board would rely on provincial processes and approvals as evidence that the Board's requirements are met.

The above measures could be implemented without changing the *NEB Act*.

If this approach were selected most of the unnecessary overlap would disappear.

Regulatory overlap could also be reduced by raising the present 50 kV exemption limit to 120 kV to accord with the lowest transmission voltage level generally used for system interconnections. Such a change would reduce the number of applications requiring a public hearing by the Board.

(iii) Set Up a Federal Inter-Delegation Scheme

As long as international power lines are federal works it is not possible to simply relinquish jurisdiction to the provinces. Parliament may, however, employ certain devices, commonly referred to as inter-delegation mechanisms, to delegate federal authority to the provinces. Such mechanisms include referential legislation, administrative inter-delegation or conditional legislation, or some combination of the three.

While not an easy solution, consideration might be given to establishing an administrative inter-delegation scheme whereby the Government of Canada, acting under the authority of a federal statute, would delegate to a provincial body the authority to regulate the construction and operation of international power lines. Administrative inter-delegation schemes have been employed for various marketing boards and have been upheld by the Supreme Court of Canada. Parliament would not be relinquishing federal responsibilities to the provinces; rather, Parliament would be employing as its own a provincial agency for the purpose of implementing federal legislation relating to the regulation of international power lines.

The setting up of an inter-delegation scheme would require careful legislative drafting and the cooperation of the provinces to ensure that the scheme would adequately protect and serve the national public interest insofar as system interconnections can have impacts beyond provincial boundaries. Provincial governments and utilities would undoubtedly favour such an approach.

This option, if implemented, could be applicable to both certification and detailed routing.

Detailed Routing

(i) Maintain Existing NEB Role Respecting Detailed Routing

This option would guarantee consistent route approval procedures, with full public participation, across Canada. Landowners would continue to be provided with the opportunity to comment on the proposed route of a power line at the detailed route hearing and also to express their views about appropriate levels of compensation and land acquisition.

Retention of the Board's existing procedures would do nothing to reduce duplication. Utilities would have to be familiar with two distinct processes for route approval and land acquisition. Where a project had previously passed through a provincial review, utilities might encounter some uncertainty with respect to procedural requirements, unanticipated construction delays or modifications to engineering design or construction practices, especially if the Board were to require a change in the detailed route of the line.

(ii) Provision for Exemption of Certain Projects from the Board's Detailed-Routing and Land Acquisition Requirements

This option would reduce the regulatory burden by allowing the Board to exempt from the detailed-routing and land-acquisition processes all international power lines where the Board is satisfied that the provincial processes are adequate to protect the national public interest. The Panel expects that most international power lines would come under this category.

This option would retain the authority of the Board to conduct a detailed-route hearing for those relatively few cases where a proposed international power line could, because of its length, voltage class or other characteristics, raise significant national concerns. Cases where such concerns may arise include international power lines associated with export-dedicated facilities located many miles from the international boundary, power lines which traverse another province to provide access to export markets, as well as power lines designated by the Governor in Council under section 90.1 of the Act. The determination of whether an international power line should be exempt from detailed routing could be made during the certification process on a case-by-case basis.

This option would be viewed by utilities and provincial governments as an improvement over the situation that exists today. However, their objections to federal involvement in detailed routing for those international power lines which raise significant national concerns would remain. Affected landowners and other public interest groups would likely be opposed to this option.

This option would require changes to the *NEB Act*.

(iii) Revoke Sections of the *NEB Act* Dealing with Detailed Routing and Land Acquisition

This option would restore the Board's regulatory mandate to the situation which existed before 1983 when the Act was amended to include authority to approve the detailed routes for international power lines and procedures for land acquisition and compensation. Before then, the Board only certificated international power lines. Such certification included a review of the environmental impacts of the general route for the proposed line in order to determine that the corridor selected was the best among several alternatives considered. To the extent that the detailed route was located within the preferred corridor, the Board would have no further involvement in the certification process. Detailed route and land acquisition would be undertaken through provincial processes. If these matters are viewed as incidental or ancillory to the federal government's jurisdiction over interprovincial and international works and undertakings and the field is clear, provincial legislation relating to land acquisition and compensation would be valid under the heading of property and civil rights.

Generally, utilities and the provincial governments would welcome this option as a significant step in reducing overlap and regulatory burden. Affected landowners and interested consumer groups on the other hand would not likely view this option with favour. At present, they have the opportunity to participate in both the provincial and federal levels of review. While each province has power line routing and land acquisition procedures, including expropriation powers, the implementation of those procedures and the degree of recognition afforded to the rights of affected landowners varies from one province to another. Thus the uniformity of the review process that would apply throughout Canada would be lost if the NEB review process were eliminated.

This option could introduce some difficulties if the Board were to retain its jurisdiction over designated power lines pursuant to Section 90.1 of the NEB Act and over international power lines traversing another province enroute to export markets. If detailed-route determination and land acquisition were to fall under provincial authority, utilities wishing to construct such lines could be frustrated by a province across whose territory a new power line might need to be built through an inability to acquire the necessary right-of-way.

Changes to the *NEB Act* would be required to implement this option.

Chapter 8
Concluding Observations

It is important not to allow ourselves to forget how different the electric utility business is from other energy enterprises. We should also recognize that our Canadian electric utility structure is significantly different from that in the United States. And since electricity and its supply are different, both generally and in Canada, it is not surprising that the regulation of electricity exports has taken on a character of its own. Some flavour of this is found in the first two chapters of this report. Accordingly, consideration of changes to, or relaxation of, the regulation of electricity exports is not simply a matter of adapting a mould developed for corresponding exercises in other energy areas.

Having in mind the Minister's comments in his request for a review of electricity export regulation, and not forgetting the unique aspects of the activity being regulated, the Panel felt it important to examine this particular regulatory function by starting from first principles. While not ignoring the important things that can be learned from history, and not overlooking the facts as they exist today, the Panel tried to take a basic approach to the development of options for possible change. We tried to have regard for fundamental benefits and costs of electricity export regulation, even though we know that in such regulation precise quantification is virtually impossible. Evaluations involve much judgement and common sense.

The options set forth for further consideration by the Board in its development of a response to the Minister are, of course, not all of the possibilities that could be envisioned. However, we have presented what we felt was a reasonable spectrum. Some of the options are interdependent; examples follow:

- Relying on an offer mechanism to satisfy Section 83 of the *NEB Act* (that the electricity to be exported be surplus to reasonably foreseeable Canadian needs), would require that the second price guideline be maintained, because this is the mechanism by which the offer mechanism would be implemented. Price affects perception of need.

- Whether export floor prices are appropriate depends on the continued existence of the first or third price guidelines.

- If it were decided to make explicit the Board's jurisdiction over the construction and operation of export-dedicated power lines traversing an adjoining province, it may not be consistent to delegate federal power line regulation to the provinces or to revoke sections of the *NEB Act* dealing with detailed routing and land acquisition.

Not only are the options themselves interrelated but making a choice depends on what objectives are most important in relation to the public interest. For example, a policy emphasis on economic and equity considerations would point toward maintaining the first and second price guidelines and facilitating equitable conditions of access to export markets for all potential exporters, while reducing federal regulation over matters having no important extra-provincial impacts. In contrast, a policy emphasis on protecting security of supply and controlling federal works, but leaving all commercial issues to the market-place, would point toward focussing on surplus and transmission line regulation while de-emphasizing the price guidelines. These are just two examples illustrating the interrelationship of policy perspectives and regulatory mechanisms.

The foregoing Chapters constitutes our report on the public hearing held pursuant to Order No. EHR-1-86

R. Priddle
Presiding Member

R.F. Brooks
Member

L.M. Thur
Member

Appendix I

File Number: 1337-13
10 September 1986

TO: Holders of Certificates for International Power Lines and Electricity Export Licenes and Orders.
Electric Utilities, Goverments, Associations and Other Interested Parties as per Appendix III of the Directions on Prcedure.

RE: National Energy Board Inquiry on the Federal Regulation of Electricity Exports

The Board is today announcing that it will hold a public hearing commencing in Ottawa on 24 November 1986, and continuing in Fredericton, New Brunswick on 1 December, and in Vancouver, British Columbia on 9 December on the federal regulation of electricity exports; a copy of the News Release and the Directions on Procedure are attached. You will note that the inquiry results in part from a request by the Honourable Marcel Masse, Minister of Energy, Mines and Resources, that the Board review and report on federal regulation of electricity exports in the light of the government's policy to reduce the regulatory burden. Copies of the Minister's letter in both official languages are attached. Interested parties planning to participate in this hearing are requested to notify the Board in writing by 26 September 1986.

Attached to the Directions on Procedure as Appendix IV, is a statement of issues which interested parties may address. The Board is prepared to consider suggestions for additional issues for inclusion in the hearing. To inform all interested parties in a timely manner before the hearing commences what additional issues will be discussed, the Board requests that any such suggestions be forwarded to the Board in writing by 26 September 1986.

Written submissions from interested parties in respect to the statement of issues outlined in Appendix IV as well as any supplementary issues that may later be included in the hearing are required to be filed with the Board by 27 October 1986.

Yours truly,

J.S. Klenavic,
Secretary

Attachments

UNOFFICIAL TRANSLATION OF THE LETTER FROM THE MINISTER OF ENERGY, MINES AND RESOURCES TO THE CHAIRMAN OF THE NATIONAL ENERGY BOARD

2 September 1986

Mr. R. Priddle
Chairman
National Energy Board
473 Albert Street
Ottawa, Ontario
K1A 0E5

Dear Mr. Priddle:

As you know, the government has recently launched a Regulatory Reform Strategy designed to reduce and simplify the federal regulatory process. The elements of the strategy that relate generally to energy are as follows:

1. Regulation should be reduced where the practical interests of the economy call for it.

2. Regulatory procedures should be simplified so as to increase public access to and participation in the regulatory process.

3. Regulation should be streamlined and made

more efficient and effective to reduce costs, uncertainties, and delays.

4. There should be increased regulatory cooperation with the provinces with a view to addressing the overall regulatory burden to Canadians and eliminating wasteful duplication.

5. Regulation should not be used unless there is clear evidence that a problem exists, and unless the benefits of regulation exceed the costs.

In addition to the above general directives, the Cabinet has also asked that energy export licensing procedures be reviewed with a view to streamlining and shortening the approval process significantly. As you know, substantial progress has already been made in the regulation of oil and natural gas exports as a result of the Western Accord and the Agreement on Natural Gas Markets and Prices.

I would now like the Board, under Section 22, Part II of the National Energy Board Act, to review and report on federal regulation of electricity in light of the government's regulatory policy. The Board should seek the views of interested parties to the extent that this would contribute to a better understanding of how reform could be achieved.

In carrying out the review, the Board should consider any and all reforms which would simplify and reduce regulation of electricity exports and international transmission lines. Without restricting the scope of the review, the Board should have particular regard to the following:

1. The potential to reduce or eliminate any overlap of federal and provincial regulation.

2. The appropriateness of the current method for determining whether the electricity to be exported is surplus to reasonably foreseeable Canadian requirements.

3. The appropriateness of the three price criteria used to assess proposed exports.

4. The potential to reduce the amount of material that must be filed by applicants for licences and certificates.

5. The appropriateness of the twenty-five year limit on the duration of electricity exports.

In rendering your report, I would like you to be as specific as possible in defining the options that the government can consider. These options will then be reviewed in the context of the government's overall regulatory reform agenda.

Sincerely,

Marcel Masse

File Number: 1337-13
Date: 3 September 1986

EHR-1-86
Directions on Procedure
Inquiry on Federal Regulation of Electricity Exports

By letter dated 2 September 1986, the Honourable Marcel Masse, Minister of Energy, Mines and Resources, asked the National Energy Board ("the Board"), pursuant to section 22, Part II of the National Energy Board Act ("the Act"), to review and report on the federal regulation of electricity exports in light of the government's policy to reduce and simplify the federal regulatory process.

As part of the inquiry the Board decided on 3 September 1986, to hold a public hearing to obtain the views of interested parties on a number of issues relating to the regulation of electricity exports and international power lines by the Board.

Public Viewing

1. A copy of all documentation in this matter will be available for viewing in the Board's Library, Room 962, 473 Albert Street, Ottawa, Ontario and its office in Calgary, Alberta at 4500-16th Avenue, N.W.

Notice of Intention to Participate

2. Any party wishing to participate in the hearing shall notify the Secretary of the Board in writing by 26 September 1986, indicating at that time any response to paragraph 10 of this order and at which location the party wishes to be heard.

3. The Secretary will issue a list of participants and of any additional issues to be considered in the hearing shortly after 26 September 1986.

Submissions and Letters of Comment

4. Submissions are required to be filed with the Secretary and served on all interested parties by 27 October 1986.

5. Letters of comment are required to be filed with the Secretary by 27 October 1986.

Hearing

6. The public hearing will be held at the following locations and dates:

   Monday, 24 November 1986 at 1:30 p.m.
   National Energy Board
   473 Albert Street
   9th Floor
   Ottawa, Ontario

   Monday, 1 December 1986 at 9:30 a.m.
   Fredericton Inn
   1315 Regent Street
   Fredericton, New Brunswick

   Tuesday, 9 December 1986 at 9:30 a.m.
   Hyatt Regency Hotel
   655 Burrard Street
   Vancouver, British Columbia

Notice of Hearing

7. The Board will arrange for publication of the Notice of Public Hearing attached as Appendix I in the publications listed in Appendix II.

Service to Parties

8. The Board will serve a copy of these Directions on Procedure and attached Notice of Public Hearing on those parties listed in Appendix III.

List of Issues

9. A list of basic issues to be addressed in the submissions at the hearing is attached as Appendix IV.

10. Any party wishing to add to the list of issues shall file their additions with the Secretary of the Board by 26 September 1986.

11 The Board will advise all parties if any additions are made to the list of issues shortly after 26 September 1986.

Filing and Service Requirements

12. Where parties are directed by these Directions on Procedure or by the NEB Rules of Practice and Procedure to file or serve documents on other parties, the following number of copies shall be served or filed:

    (1) for documents to be filed with the Board, provide thirty (30) copies;

    (2) for documents to be served on other parties, provide one (1) copy.

13. Parties filing or serving documents at the hearing shall file or serve the numbers of copies specified in the preceding paragraph.

14. Persons filing letters of comment shall file one copy with the Board which in turn will provide copies for all other parties.

15. Parties filing or serving documents fewer than four (4) days prior to the commencement of the hearing shall also bring to the hearing a sufficient number of copies of the documents for use by the Board and other parties present at the hearing.

Simultaneous Interpretation

16. Simultaneous interpretation will be provided at this proceeding if requested by any party. In order to facilitate the arrangement of this service, parties are asked to advise the Board by 26 September 1986.

General

17. All parties are asked to quote Hearing Order No. EHR-1-86 when corresponding with the Board in this matter.

18. These Directions supplement the NEB Rules of Practice and Procedure.

J.S. Klenavic,
Secretary

APPENDIX I
To Order EHR-1-86

NATIONAL ENERGY BOARD

NOTICE OF PUBLIC HEARING

Federal Regulation of Electricity Exports

By letter dated 2 September 1986, the Honourable Marcel Masse, Minister of Energy, Mines and Resources, asked the National Energy Board ("the Board"), pursuant to section 22, Part II of the National Energy Board Act, to review and report on the federal regulation of electricity exports in light of the government's policy to reduce and simplify the federal regulatory process.

As part of the inquiry the Board will hold a public hearing to obtain the relevant views of interested parties, groups, organizations and companies on a number of issues relating to the regulation of electricity exports and international power lines by the Board.

The hearing will be held in Ottawa, Ontario, Fredericton, New Brunswick and Vancouver, British Columbia as follows:

Monday, 24 November 1986 at 1:30 p.m.
National Energy Board
473 Albert Street
9th Floor
Ottawa, Ontario

Monday, 1 December 1986 at 9:30 a.m.
Fredericton Inn
1315 Regent Street
Fredericton, New Brunswick

Tuesday, 9 December 1986 at 9:30 a.m.
Hyatt Regency Hotel
655 Burrard Street
Vancouver, British Columbia

Anyone wishing to participate in the hearing should advise the Secretary of the Board, in writing, by 26 September 1986. The Secretary will then issue a list of interested parties.

Anyone wishing to provide only comments on the subject should write to the Secretary of the Board.

The deadline for receipt of either written submissions or letters of comment is 27 October 1986.

Information on the procedures for this hearing (Reference Number: EHR-1-86) or the NEB Rules of Practice and Procedure governing all hearings (both documents available in English and French) may be obtained by writing to the Secretary or telephoning the Board's Regulatory Support Office at (613) 998-7204.

J.S. Klenavic
Secretary
National Energy Board
473 Albert Street
Ottawa, Ontario
K1A 0E5

3 September 1986

APPENDIX II
to Order EHR-1-86

Publications	City
"TimesColonist"	Victoria, British Columbia
"The Sun Province", & "Le Soleil de Colombie"	Vancouver, British Columbia
"Herald"	Calgary, Alberta
"The Edmonton Journal" & "Le Franco-Albertain"	Edmonton, Alberta
"The Leader-Post" and "Journal l'eau-vive"	Regina, Saskatchewan
"The Winnipeg Free Press	Winnipeg, Manitoba
"La Liberté"	St. Boniface, Manitoba
"The Globe and Mail", "Star","Financial Times of Canada,"The Financial Post" and "L'Express"	Toronto, Ontario
"The Citizen" & "Le Droit"	Ottawa, Ontario

"The Gazette", "Le Devoir" & "La Presse"	Montreal, Quebec
"Le Soleil" & "The Chronicle Telegraph"	Quebec, Quebec
"The Daily Gleaner"	Fredericton, New Brunswick
"Telegraph Journal"	Saint John, New Brunswick
"The Chronicle Herald" & "Mail Star"	Halifax, Nova Scotia
"Telegram"	St.John's, Newfoundland
"Guardian "	Charlottetown, Prince Edward Island
"Whitehorse Star"	Whitehorse, Yukon Territory
"News North"	Yellowknife, Northwest Territories
"Canada Gazette"	Ottawa, Ontario

APPENDIX III
to Order EHR-1-86

List of Addressees

Alberta Power Ltd.
Alberta Public Utilities Board
Alberta Energy Resources Conservation Board
Alberta Department of Energy and Natural Resources
Atomic Energy of Canada Limited
Attorney General for the Province of New Brunswick
Attorney General for the Province of Newfoundland
Attorney General for the Province of Nova Scotia
Attorney General for the Province of Prince Edward Island
Attorney General of the Province of Ontario
Attorney General for the Province of Manitoba
Attorney General for the Province of Saskatchewan
Attorney General for the Province of Québec
Attorney General for the Province of British Columbia
Atlantic Province Economic Council
Alberta Petroleum Marketing Commission
Association of Major Power Consumers of Ontario
B.C. Hydro
B.C. Ministry of Energy, Mines and Petroleum Resources
B.C. Utilities Commission
B.C. Wildlife Federation
Canadian Electrical Association
Canadian Energy Research Institute
Canadian Gas Association
Canadian Niagara Power Co. Ltd.
Canadian Nuclear Association
Canadian Petroleum Association
Canadian Transit Company
Churchill Falls (Labrador) Corporation Ltd.
Coal Association of Canada
Cominco Ltd.
Consumer's Association of Canada
Consumers Association (Manitoba)
Consumers Association (B.C.)
Canadian for Nuclear Coalition Responsibility
Canadian Manufacturer's Association
Conservation Council of New Brunswick
Committee for a Coherent Energy Policy
Detroit and Canada Tunnel Corporation
Economic Council of Canada
Electric Energy Marketing Agency
Electrical and Electronic Marketing Association of Canada
Energy Probe
Electrical League of New Brunswick
Environment Canada
Fraser Inc.
Friends of the Earth
Great Lakes Power Ltd.
Hydro-Québec
HOPE Inc.
Independent Petroleum Association of Canada
Interchurch Taskforce on Northern Flooding (Manitoba)
Manitoba Environmental Council
Maritime Energy Coalition
Maine & New Brunswick Electric Co.
Manitoba Energy Authority
Manitoba Energy and Mines
Manitoba Hydro
Manitoba Public Utilities Board
Maritime Electric Company Limited
New Brunswick Public Utilities Board
New Brunswick Electric Power Commission
New Brunswick Public Utilities Board

New Brunswick Ministry of Natural Resources
Newfoundland Commission of Public Utilities
Newfoundland & Labrador Hydro
Newfoundland Dept. of Mines and Energy
Newfoundland Light & Power Co.
Northern Canada Power Commission
Northwest Territories Department of Justice and Public Service
Northwest Territories Public Utilities Board
Nova Scotia Ministry of Mines and Energy
Nova Scotia Board of Commission of Public Utilities
Nova Scotia Power Corporation
Ontario Energy Board
Ontario Hydro
Ontario Ministry of Energy
Prince Edward Island Public Utilities Board
Prince Edward Island Ministry of Energy & Forest
Peace Valley Environmental Association
Québec Ministère de l'Énergie et des Ressources
Québec Régie de l'Électricité et du Gaz
Regional Economic Expansion
Saskatchewan Mineral Resources
Saskatchewan Power Corp.
Saskatchewan Public Utilities Review Commission
St. Lawrence Power Company
Sierra Club of Western Canada
Society Promoting Environmental Conservation
TransAlta Utility Corporation
West Kootenay Power & Light Co.
Yukon Territory, Department of Justice
Yukon Electrical Public Utilities Board
Yukon Electrical Company Limited

APPENDIX IV
to Order EHR-1-86

Basic Issues to be Addressed in the Hearing on Federal Regulation of Electricity Exports

This Appendix outlines a number of issues with respect to federal regulation of electricity exports which interested parties are invited to address.

1. Surplus Determination

Under section 83(a) of the Act the Board is required to satisfy itself that electricity proposed to be exported is surplus to reasonably foreseeable Canadian requirements.

Most electric utilities in Canada have mandates to serve the electricity needs within their respective provinces. It is an inherent characteristic of the electric utility industry that from time to time electricity which is excess to domestic requirements will be available for export.

To determine whether proposed exports would be surplus to Canadian requirements, it has been the Board's practice to require potential exporters to demonstrate their capability to deliver the amounts of electricity proposed to be exported. In addition it also has required applicants to first offer the proposed exports to either directly interconnected or economically accessible Canadian utilities on terms comparable to those available to the U.S. buyer.

Comments are solicited on the continuing appropriateness of the Board's surplus determination procedures and proposals are invited for different ways in which the Board might proceed.

2. Price Regulation

Section 83(b) of the Act states that the Board shall satisfy itself that the price to be charged by the applicant for power exported is just and reasonable in relation to the public interest. To do this the Board has developed three guidelines that the export price should meet. Firstly, it should recover its appropriate share of the costs incurred. Secondly, it should not be less than the price to Canadians for equivalent service. Thirdly, it should not be materially less than the least-cost alternative available to the foreign purchaser.

The first price guideline is intended to guard against subsidization, directly or indirectly, of the export price. In this regard the Board's practice has been to take into account, where appropriate, both "private" and "social" costs when examining whether the expected revenues generated from exports recover all associated costs.

The second price guideline is designed to ensure that electricity is not exported at prices below those available to Canadians. In this respect it has been the Board's practice to examine the extent to which economically accessible Canadian utilities are first offered the power proposed to be exported on the basis of equivalent service. This examination may include matters related to price differentiation (i.e. the extent to which the export price or the export price formula are used in offers to Canadi-

ans), the extent to which the concept of economic value to the purchaser of the service being provided should be taken into account, the extent to which the export price will continue to meet this guideline throughout the duration of the proposed exports, as well as the extent to which wheeling charges and/or rebates to U.S. utilities are taken into account in the price to be offered. Other issues of concern might include the timing of offers, the quantity being offered as well as whether a single contract or contracts providing for several types of exports may be treated as a package deal.

The third price guideline is intended to ensure that the export price compares favourably with the price of alternatives available to the importer. With respect to electricity, however, the Board recognizes the difficulty, at times, of obtaining relevant U.S. information required to satisfy this guideline because of the size and complexity of the interconnected U.S. electric utility systems as well as the uncertainty of future supply costs.

Comments are solicited on the continuing appropriateness of the Board's current price guidelines and proposals are invited for other ways in which the Board might proceed.

3. Licence Term

Section 85 of the Act limits the duration of licences to 25 years from the dates to be fixed in the licences.

Because of the difficulty of making accurate long-term forecasts, it has been the Board's practice to scrutinize requests for long term exports very carefully since it must satisfy itself before granting a licence that the electricity will be surplus and that the price will be just and reasonable for the duration of the licence.

The Board recognizes, however, the changing circumstances of the electricity export trade and, in particular, has noted proposals to build large generating facilities for dedicated long term firm exports. It therefore seeks views of interested parties on the current 25 year limit and suggestions on what the appropriate limits might be.

4. Transmission Access

Currently the Board does not have jurisdiction to regulate interprovincial transmission facilities except as allowed by section 90.1 of the NEB Act. The Board is aware however of situations in which potential Canadian exporters do not have direct transmission access to potential U.S. purchasers. Such access may only be possible through the use of transmission facilities of other interconnected Canadian exporters possessing international power lines. Should parties wish to address this matter, the Board would be prepared to receive submissions on the considerations that should be taken into account in respect of transmission access for the specific case where the use of the transmission facilities of another Canadian utility is required by a potential Canadian exporter, expressly for export purposes.

5. Issues Related to Federal and Provincial Overlaps and to Regulatory Process

In keeping with the federal government's Regulatory Reform Strategy designed to reduce and simplify the federal regulatory process, the Board seeks the views of interested parties on how any overlap of federal and provincial regulation might be reduced or eliminated with respect to electricity export licensing, certification of international power lines and approval of the detailed routing for international power lines. In addition the Board seeks the views of interested parties on how to simplify and streamline the processes followed by the Board in respect of electric power export matters. The Board also invites comments on how the amount of material that must be filed by applicants might be reduced.

File Number: 1337-13
8 October 1986

TO: All Interested Parties - EHR-1-86

RE: National Energy Board Inquiry on the Federal Regulation of Electricity Exports

The Board's letter of 10 September 1986, announcing that it would hold a public hearing on the federal regulation of electricity exports, included a statement of issues which interested parties could address. In addition, the letter stated that the Board was prepared to consider suggestions for additional issues for inclusion in the hearing and any such suggestions were to be forwarded to the Board in writing by 26 September 1986.

The Board has now received and considered how best to deal with the additional issues identified by interested parties. Some suggestions related to subject matters while others were procedural in nature. It is the Board's opinion that several subject matters suggested fall within the parameters of the Board's original statement of issues and therefore need not be delineated separately. Others are new and will be added to the list; still others raise matters which are outside the Board's purview and on which the Board therefore does not wish to receive submissions. With respect to matters of procedure raised by interested parties, the Board believes that they all fall under its original statement of issues.

I. Subject matters, raised by interested parties which are already covered in the Board's statement of issues under the second basic issue, i.e., Price Regulation, include:

(i) the requirement for effective mechanisms to ensure adjoining provinces the opportuty to assess their needs for the electricity prposed to be exported,

(ii)the interfuel competition considerations where gas exports could have an impact on electricity exports in the same end markets,

(iii) the criteria to be considered where electricity exports have implications both of a technical and economic nature for neighbouring provinces.

II. New issues on which submissions may be made include:

(i) whether exports of electricity generate from imported energy sources should be exempt from regulation by the Board,

(ii) the treatment of surplus, export price and other public interest considerations related to long-term export proposals which may involve prebuilt or dedicated facilitites,

(iii) the criteria applicable to certification of international power lines including those which should be considered when such proposed facilities might have implications for adjacent Canadian utilities.

III. Issues raised by interested parties on which the Board does not wish to receive submissions include:

(i) matters related to the merits of specific generation and transmission projects which may be involved in particular export proposals or possibilities,

(ii) intraprovincial or interprovincial exchanges of electricity unrelated to the interception of or the possible wheeling of electricity exports by Canadian utilities,

(iii) the impact of export revenues on domestic pricing of electricity, as well as all matters related to provincial regulation of domestic electricity prices.

IV. Procedural issues which fall within the parameters of the Board's statement of issues under the Board's fifth basic issue, i.e., matters related to Federal and Provincial Overlaps and to Regulatory Process, include:

(i) the requirement by the Board to identify major items to be considered before a hearing proceeds,

(ii) the increase in export limits without a public hearing,

(iii) the adequacy of export licence terms and conditions,

(iv) the revisions to the Act and Regulations to respond to changing technology,

(v) detailed routing of international power lines and impact assessment processes.

To facilitate the hearing process and to provide as wide a forum as possible for views from interested parties, the Board will allow parties to file supplemental submissions after having reviewed the submissions of other parties, as well as to file written final arguments upon completion of the hearing. These and the other applicable procedures are outlined in the attached Supplement to the Directions on Procedure.

Insofar as the public hearing sessions of the inquiry are concerned, the Board expects parties to keep their opening remarks as brief as possible so that there will be time for questioning in a non-adversarial way. Parties are reminded that the Board and participants will have received the written submissions in advance; reading of these into the record will not be necessary. It will not be possible for the Board to set specific dates and times for appearances in the various locations; however, the Board will do its best to accommodate parties with special problems.

Yours truly,

J. S. Klenavic
Secretary

Attach.

File No. 1337-13
2 October 1986

Order AO-1-EHR-1-86
Supplement to Directions on Procedure
Inquiry on Federal Regulation of Electricity Exports

Under cover of a letter dated 10 September 1986, the Board issued Order No. EHR-1-86 for the inquiry on federal regulation of electricity exports. Paragraph 10 of the Order invited interested parties to add to the issues listed in Appendix IV thereof.

The Board has considered the additional issues identified by interested parties and is prepared to receive submissions on those issues referred to in paragraph 1 below. The Board directs as follows.

Issues

1. A list of the additional issues that can be addressed in the submissions is attached as Appendix I.

2. The Board will be prepared to receive submissions only on the issues outlined in Appendix IV of EHR-1-86 and Appendix I of this Order (AO-1-EHR-1-86).

Supplemental Submissions

3. A party wishing to file a supplemental submission on the prescribed subjects after having reviewed the submissions of other parties shall do so by 10 November 1986.

List of Witnesses

4. Parties shall provide a list indicating the witnesses they intend to present at the hearing by 10 November 1986 and the qualifications of the witnesses.

Order for Presentation of Evidence

5 Parties who have filed written submissions and who wish to present a witness to speak to their submission will present their evidence at the location indicated in the notice of intention to participate. Evidence will be presented at each location of the hearing in the following order:

a) Utilities and companies alphabetically
b) Groups and organizations alphabetically
c) Individuals alphabetically
d) Governments and governments agencies alphabetically

6. Testimony during the hearing should be limited to brief opening remarks; questions on the written submissions and on opening remarks may then be asked.

Order of Questioning

7. Parties will be given the opportunity to ask questions in the following order:

a) Utilities and companies alphabetically
b) Groups and organizations alphabetically
c) Individuals alphabetically
d) Governments and governments agencies alphabetically
e) the Board.

8. The order of appearances for questioning at each location will include all interested parties in the hearing.

Final Arguments

9. Final argument may be presented in writing after completion of the hearing at a date to be determined by the Board, but no less than two weeks after completion of the hearing.

10. The NEB Draft Rules of Practice and Procedure will apply insofar as they are not inconsistent with the specific Directions on Procedure governing this proceeding.

11. For information on this hearing, or the procedures governing the hearing, contact Mr. Denis Tremblay, Regulatory Support Officer, at (613) 998-7198.

J.S. Klenavic,
Secretary

Appendix I to Order AO-1-EHR-1-86

Additional Issues to be Addressed in the Hearing on Federal Regulation of Electricity Exports

This Appendix outlines issues additional to those described in Appendix IV to Order EHR-1-86 which interested parties are invited to address as part of this hearing.

1. Exports from Imported Energy Sources

Under the National Energy Board Act, the Board has jurisdiction over the regulation of all electricity exports whether produced from domestic or imported fuel sources. At issue is whether exports of electricity generated from imported energy sources such as imported oil or coal should be exempt from regulation by the Board.

Comments are solicited on the continuing appropriateness of the regulation by the Board of electricity exports arising from imported energy sources.

2. Dedicated Export Facilities

The Board's original statement of issues with respect to Licence Terms recognized the concept of building generating facilities dedicated for long-term firm exports and solicited the views of interested parties on what the appropriate maximum licence term might be.

Comments are also solicited on the treatment of surplus, export price and any other public interest considerations related to long-term export proposals which may involve prebuilt or dedicated facilities.

3. Certification of International Power Lines - Assessment Criteria

Under Section 44 of the Act, the Board is required to satisfy itself that a proposed international power line is and will be required by the present and future public convenience and necessity. In addition to any public interest that in the Board's opinion may be affected by the granting or refusing of an application for a certificate, the Board may have regard to the following:

a) the availability of electricity to the international power line;

b) the existence of markets, actual or potential;

c) the economic feasibility of the international power line; and

d) the financial responsiblity and financial structure of the applicant

The Board is interested in the views of parties on the continuing appropriateness of the criteria applicable to certification of international power lines. In particular, comments are solicited on the criteria that should be considered when such proposed facilities might have implications for adjacent Canadian utilities.

Appendix II

Provincial Regulatory Practices

Over the years many provinces have introduced various measures to exercise control over the disposition of their resources. This Appendix briefly summarizes the regulatory processes that have been implemented with respect to electricity in the provinces.

In *British Columbia* legislation has been enacted under the *Environment Management Act* and the *Utilities Commission Act* providing for detailed reviews of major projects, particularly in regard to environmental impacts and for rate regulation. The Utilities Commission requires an Energy Removal Certificate to be issued for the removal from the province of an energy resource produced, manufactured or generated within the province.

In *Alberta* the Energy Resources Conservation Board appraises productive capacities, in-province requirements and markets outside Alberta. If future exports were to impact on utility rates the Alberta Public Utilities Board would become involved. The Alberta Minister of the Environment is authorized to order assessments of the environmental impacts of projects.

In *Saskatchewan* the Provincial Cabinet reviews any proposed exports. Environmental assessments are required by the Minister of the Environment and the Public Utilities Review Commission reviews rates including the extent to which exports would impact on utility domestic rates.

In *Manitoba* Provincial Cabinet approval is required before power may be removed to another province or the U.S. The Manitoba Public Utilities Board reviews domestic rate impacts of exports. Environmental assessments are carried out under authority of the Department of Mines, Resources and Environmental Management.

Ontario Hydro is required to submit all export contracts for approval by the *Ontario* cabinet. Financial and operational impacts of exports are reviewed at rate hearings of the Ontario Energy Board. Environmental assessments are carried out under the authority of the Minister of Environment.

Cabinet approval of all exports is required in *Québec*. Environmental Impact Assessments are required under the authority of the *Environment Quality Act*. Hydro-Québec annually appears before a Committee of the National Assembly.

In *New Brunswick* export agreements are approved by Cabinet and all major generation developments are subject to an environmental review process.

A Board of Commissioners of Public Utilities is responsible for the general supervision of all public utilities in *Nova Scotia*. The Board of Commissioners may, on its own initiative, make all examinations and inquiries necessary to keep informed of the compliance of utilities with provisions of the law.

Provision is made under the *Newfoundland Environmental Assessment Act* for a review of the environmental impact of any enterprise, activity, plan or program. New generating plants and new transmission lines more than 500 metres away from an existing right-of-way would require such a review unless granted an exemption by the Cabinet. Public hearings may be conducted at the discretion of the Cabinet.

The Maritime Electric Company Limited is regulated by the Public Utilities Commission of *Prince Edward Island*. The province has no formal environmental review process but the Cabinet may require the preparation of environmental impact statements. Environmental matters are the concern of the Department of Community and Cultural Affairs.

Appendix III

Summary Of Submissions

Some 50 submissions and letters of comments were received from interested parties to the hearing. This Appendix contains an overview of the major positions taken by submittors grouped as utilities, governments, associations and public interest groups.

Submissions by utilities and governments are presented in geographical order from east to west to capture the different regional viewpoints and concerns. Submissions by associations and public interest groups are presented in alphabetical order.

1 Utilities

Nova Scotia Power Corporation submitted that the present surplus determination tests and price regulation guidelines should be retained with some modification in the case of dedicated export facilities. There should be no requirement to make a power surplus determination for facilities being constructed for other than export purposes. In addition, export licence terms should not be restricted to twenty-five years or less, particularly in the case of dedicated facilities. NEB economic reviews of proposed expor s should not consider the lost opportunity effects on other utilities competing in the same market. Detailed routing and environmental impact assessments are handled at the provincial level and Board involvement in this area is, therefore, an unnecessary duplication of effort. The technical review of export facilities should be limited to a consideration of whether the facility passes the appropriate reliability criteria set by the North American Electric Reliability Council. In respect to transmission access , it should normally be a matter of negotiation between utilities. The NEB should retain its present powers in this area but should not be given additional authority to mandate wheeling for export purposes.

New Brunswick Power maintained that it had a provincial obligation to ensure a continuous supply of electricity for its present and future requirements. N.B. Power thus is legally able to export only that power which is surplus to the province's requirements. In determining what is surplus, the Board should develop a uniform method which would be adhered to by Canada and the provinces and would exempt from regulation, any electricity generated for export from imported energy sources. In respect of export price regulation, N.B. Power argued that there could be circumstances, such as financial risk reduction, where an export should be allowed even though the first price guideline might not be met. The second price guideline for interruptible exports should require offers to Canadian utilities at prices derived from the export price formula and not at the export price. The third price guideline should continue to be applied. N.B. Power stressed that Board decisions should be consistent from one application to the next; licence and certificate terms and conditions should be consistently concise and unambiguous. N.B. Power also urged that the Board's jurisdiction not be increased to include the regulation of transmission access between utilities. It also recommended that the Board accede sole jurisdiction to provincial governments on the issues of routing and safety of international power lines.

Maine & New Brunswick Power stressed the need for the Board to maintain regulatory flexibility, especially for utilities like itself operating dedicated facilities which were developed with the knowledge of the Board that the power was not required for Canadian use. Maine & New Brunswick Power submitted that for exports from dedicated facilities only the first of the Board's price guidelines is applicable. Its continued application will ensure that the price charged in the export market recovers the cost of serving that market. Maine & New Brunswick Power feels the remaining two price guidelines are simply not applicable to dedicated facilities wholly owned, in effect, by the market they serve.

Fraser Incorporated, in a letter of comment focussed on the particular circumstances of the company's operation. It operates industrial facilities in both Edmundston, New Brunswick and Madawaska, Maine on an integrated manufacturing basis and purchases the bulk of its power requirements for those integrated facilities from New Brunswick Power. Electricity exports by Fraser to serve its Madawaska plant thus can be construed as being surplus to Canadian requirements. In addition, since Fraser Inc. is offered electricity by New Brunswick Power at prices and on terms equivalent to those offered other large industrial users in the province, the only Board requirement would be to ensure that the export price Fraser Inc. charges to its Madawaska plant recovers at least the cost of purchased electricity. In addition, Fraser Inc. questioned the need for the Board's third price guideline.

Perth - Andover Electric Light Commission felt that the Board's first and primary purpose is to protect Canadian interest regarding the export of power and energy and the protection of the first requirement to serve Canadians needs, and submitted that the Board's regulatory powers must not be decreased in any way, so that it continues to function effectively to protect vital Canadian needs such as those of Perth-Andover Electric Light.

Maritime Electric Company stressed maintenance of the status quo, stating that present federal regulations are necessary to protect the Canadian public interest. They embody all the basic principles required for the design of good regulation. The objectives are clear, comprehensible and perceived to be fair with respect to both surplus determination and price tests. It was the intent of Parliament when the NEB Act was established that Canadians not pay higher prices than U.S. customers for power to be exported. The Board is, therefore, urged to take a broader view of the definition of "equivalent service" when making comparisons between prices charged Canadians and U.S. customers. Narrow interpretations would lead to "meaningless" definitions and would frustrate the purpose for which the Regulations were developed in the first instance. MEC was not adverse to exporters receiving the highest export price possible. Whatever the price, a "Canada first" principle should apply; i.e. Canadians should first be offered the proposed exports at the *export price*.

Newfoundland and Labrador Hydro stated that Newfoundland's objectives were to terminate the province's long-term increasing reliance on thermal generation to meet the Island's load requirements and to further develop the substantial hydraulic potential in Labrador. These developments, to be economically feasible, may initially require sales to international markets via Québec. To meet these objectives, increased federal authority to regulate interprovincial electricity transfers and wheeling, not unlike the Board's current jurisdiction respecting pipeline transmission, is required. Transmission of all sources of energy produced in Canada would thus be treated equally from a legislative, regulatory and policy perspective. It would allow Newfoundland to transmit its electricity freely without impediment to other parts of Canada, and to export markets if surplus to Canadian requirements. Federal electricity export regulations should be directed to meet Canadian needs prior to allowing exports to proceed. To the extent that there exist real Canadian energy requirements, these should be met from Canadian resources and at prices suitable in the Canadian context and not dictated by the U.S. market. This protection would not apply in situations where utilities are themselves exporters. In such cases, the export price may be appropriate since any preemption by Canadian utilities would be based on economics, not on actual supply shortages.

Newfoundland Light and Power stressed that section 90.1 of the *NEB Act* was inadequate to address the question of transmission access. This was a key issue that needed resolution if Canadian utilities were to be provided equal opportunities for export trade. Although additional regulation would be required to provide for transmission access, the Board should use that authority sparingly and only if a utility was clearly being discriminated against. If these regulations were in place, substantial deregulation would be possible in other areas. Utilities should be free to trade both interprovincially and internationally unencumbered by the need for public hearings. The Board would only be involved on a complaint basis when utilities could not resolve their differences with respect to electricity export matters.

Hydro-Québec proposed that federal regulation of electricity exports be drastically reduced and regulation left essentially up to the provinces. Under its provincial charter, Hydro-Québec is responsible for building generating and transmission facilities to meet its load requirements. Since electricity, unlike gas and oil, is a manufactured

product, and since any provincial utility could produce it, it is not a matter of necessity but rather a question of economics that Canadian utilities are interested in purchasing electricity from an exporting utility. The surplus determination test is, therefore, unnecessary. There also is no need for the NEB to play the role of arbitrator in respect to exports by requiring that offers be made to neighbouring Canadian utilities. Electricity trade should be left to free market forces. Hydro-Québec is willing to enter into mutually acceptable contracts for sales and for wheeling of electricity with both Canadian and U.S. purchasers subject to review and approval by the Québec provincial government. The province has established formal procedures with respect to environmental assessments and detailed routing of transmission lines within the province. The NEB international power line certification and detailed routing procedures are, therefore, an unnecessary duplication of effort.

Ontario Hydro reiterated its belief that the 1963 National Power Policy, which focuses firstly on the development of electricity resources for the Canadian interest and, secondly, seeks to achieve benefits by exporting surplus electricity, continues to be appropriate. Although electricity has properties different than other energy fuels, and is for the most part under the control of the provinces, there is nevertheless an overriding Canadian public interest when it is produced for export. For non-firm exports, the only necessary requirement to protect the Canadian public interest is the retention of the Board's practice of providing to allow for the curtailment or interception of exports "on demand". However, regarding firm exports, it should be the NEB's mandate to determine that exports are surplus to Canadian needs and not just the needs of the exporting utility. Ontario Hydro supports the continuation of the Board's first and second price guidelines. The export price, not the price formula, should be the governing criterion for application of the second price guideline. It suggests that the third price guideline be abandoned. In respect of transmission access and wheeling, Ontario Hydro submits that section 90.1 of the Act does not authorize the NEB to impose wheeling for exports. It is in the interest of Canadian utilities to negotiate voluntary wheeling arrangements where feasible rather than to have them imposed. It also supports the Board's current mandate in respect to certificating and detailed routing of international power lines. It suggests that the exemption order voltage limits for new international lines be raised from 50 to 125 kV to correspond with the Board's recent proposal to increase the limits for export orders.

Manitoba Hydro stated that since the determination of adequate power and surplus is a provincial concern, it is therefore unnecessary for the Board to require Manitoba Hydro to demonstrate its capability to deliver the amounts of electricity proposed to be exported. If, however, the Board continues to require a demonstration of surplus, then it should be based on assumptions used by Manitoba Hydro and not on those used by the Board. As for export price regulation, Manitoba Hydro took the position that it should not lose money on a transaction if power is preempted by Canadian utilities. Canadian utilities should, therefore, be allowed to preempt exports at the export price, but once having done so, they should not be allowed to preempt subsequent exports which may be at a lower price solely for the purpose of displacing the higher priced domestic transactions already taking place. It also urged elimination of the Board's third price guideline. On transmission line issues, Manitoba Hydro recommends that the Board rely entirely on the provincial review process with respect to environmental and routing matters. It also believes that the Board's jurisdiction should not be increased to authorize access by one utility to another utility's existing system for export purposes.

Saskatchewan Power Corporation stated that the determination of whether electricity is available for export and how related facilities are built presently necessitates approvals at several levels. When such approvals are obtained and comparable offers have been made to accessible Canadian utilities under the same conditions including price, then the Board should be able to waive the holding of a hearing and the making of a detailed investigation. In respect of price regulation, the Board need only determine that a proposed export price covers the capital and operating costs of the sourcing project (including all generation and transmission facilities); the Board's third price guidelines should be removed. In addition, utilities requesting exports of less than five years should be able to deem a temporary surplus, waive the first price guideline requirement of self sustenance and receive Board approval without a hearing.

The ***Alberta Power*** submission focussed on two issues, namely the treatment of dedicated export facilities and the question of transmission access.

In respect to the former, Alberta Power submitted that, while the current twenty-five year maximum term on export licences may be sufficient in most circumstances, the Board should have authority to extend the term beyond twenty-five years for dedicated exports, for example, to the useful life of the plant. In regard to the price criteria for dedicated exports, the Board should recognize that, in the later years of a contract, the export price may fall below the price for electric energy in the region from which it is exported. However, the Board should allow this benefit to the purchaser in exchange for his commitment to the dedicated facility. In respect to transmission access, Alberta Power submitted that the Board should have some authority to require interconnected electric transmission systems to transmit exports for another utility. This authority now exists in the case of natural gas pipelines and to an even greater extent for oil pipelines. Some broadening of section 90.1 of the Act may be necessary to provide the Board with the same authority over interprovincial power lines as it has over interprovincial pipelines.

TransAlta considers that the extent of federal regulation of electricity exports now exercised by the Board is appropriate and recommends against any significant changes in the current regulatory regime. It did suggest that the Board have the ability to extend licence terms beyond the current twenty-five year limit and also urged that any electricity exports, whether provided through dedicated facilities or produced from domestic or imported fuel sources, should be subject to the same Board regulatory procedures and criteria. In respect of transmission access, TransAlta considered that it was preferable that such arrangements be negotiated between the neighbouring provincial utilities privately. However, in TransAlta's opinion, the NEB Act now grants the Board the power to approve the construction of an international power line through a neighbouring province for a utility outside that province without the consent of the neighbouring provincial electric utility and also without the consent of the government of the neighbouring province. This ability of a utility in one province to build an international power line through another province thus provides an important safeguard to assure that arrangements for the transmission of power from one province through another province for export to the U.S. will be negotiated in good faith.

British Columbia Hydro proposed a program under which utilities would prepare and submit to the Board firm energy and capacity load/resource balances, and resulting energy and capacity surpluses, on an annual basis for up to 10 years into the future. This information would be filed with the Board and made available to interconnected Canadian utilities by B.C. Hydro. As such filings would put interconnected Canadian utilities on notice of B.C. Hydro's surplus availability and intention to market any surplus to either domestic or export customers, there should be no later requirement for B.C. Hydro to offer any firm contract negotiated with a United States utility to interconnected Canadian utilities. As for interruptible exports, B.C. Hydro proposed that interruptible sales of up to two years duration be permitted without Board approval. It also proposed that export transactions, such as those for storage purposes which involve no net exports, should not be regulated by the Board. In respect of price regulation it recommended retention of the first price guideline with the proviso that floor prices be dropped from future NEB licences; the second price guideline should be kept but the third dropped. On transmission access, B.C. Hydro submitted that a utility owning transmission facilities should not be required to provide access to them to other exporters if such access would have a detrimental effect on the revenues or operations of the owning utility. B.C. Hydro also submits that, in provinces where provincial regulation exists, the certification and routing of international power lines should rest with the province, leaving the Board to be concerned only with the licensing of exports over such facilities.

Cominco Metals generally supported the existing NEB regulations. It urged the Board to implement its proposals to increase the limits of authorization by export orders without a public hearing. This would allow Cominco to make exports by order instead of by licence as is the present case. It also submitted that the limit of 1000 GW.h/yr should be applied to each category of transaction in the interruptible classification and be included in the proposed amendment of export order limits. The maximum terms of export orders should be increased from three to five years. Applications for export orders should be simplified with existing provincial requirements being relied upon to the fullest extent possible. In addition, the Board should monitor transactions under orders or licences and waive the need for Board approval of agreements and their amendments or terminations.

West Kootenay Power, in a letter of comment stated that the basic requirement for regulation of electricity exports continues to exist although there may be areas where regulation and associated costs could be reduced. The utility generally supports the present practice of determining whether or not there is firm surplus available for export, including the offer mechanism, but questions the need for setting licence limits for interruptible exports. Turning to price regulation, West Kootenay submitted that the present three price guidelines are adequate but that the Board should be flexible in their application in the different parts of the country. It also suggested that the Board should have authority to impose retroactive settlements related to non-compliance with licence conditions. In respect of dedicated facilities, it expressed reservations about the present trend towards dedicating major new hydro-electric resources to exports as the potential for major long-term economic disruption may outweigh any short-term gains. It also submitted that to allow export sales to continue for up to twenty-five years without review seems inappropriate, as extreme changes can occur over such long periods.

Pacific Gas and Electric Company, in a letter of comment suggested that the Board provide for the longest possible licence term for export of power for large size projects involving multi-parties from both Canada and the U.S. It also stated that the Board should allow Canadian suppliers both supply and pricing flexibility to respond quickly to near term market opportunities. Any determination of surplus amounts available for export should be necessary only for long-term sales, and for those exports exceeding one year.

2 Provincial Governments and Agencies

The Government of Prince Edward Island emphasized that the potential savings from administrative simplifications or streamlining must not come at the cost of diminished protection of the public interest of Canadians where energy exports are concerned. The status quo would, in this context, be preferable to hasty reforms. The Government was also of the view that the Board had exercised its jurisdiction and powers effectively over the years and had developed a workable and equitable system for licensing and monitoring electricity exports. Any deregulation or simplification of procedures would have to be subject to the overriding public interest - that of assuring that Canadian electrical energy resources are allocated equitably to all Canadians.

The PC Opposition Caucus of Prince Edward Island argued that the present levels of regulation constitute a minimum standard and there should not be a reduction in those standards through any streamlining of regulations. It is fundamental to the very nature of Canada and Canadianism that electric power, being a natural resource, be made available to other Canadians on terms, including price, at least as favourable as those upon which it is being exported to the U.S. It also argued that provincial jurisdiction and interprovincial activities should not override the federal mandate to protect the public interest. As electricity will come to occupy a more important position in the country's energy mix, the need to reduce price disparities within the various regions in Canada will become imperative. This could be achieved through the creation of a National Pricing Policy which would equalize price disadvantages among the regions. Establishment of a clear, more equitable policy would thus make the role of the NEB easier.

The Procureur général du Québec's position mirrored that taken by Hydro-Québec. They emphasized that the government of Canada has already taken steps to deregulate hydrocarbons, which are non-renewable resources, and let free market forces play. It, therefore, does not make sense to require continued regulation for exports of electricity. Each province has a responsibility to supply its own needs and, therefore, surplus for other Canadian utilities was a matter of price, not of physical capability. The NEB, therefore, should eliminate the requirements to determine surplus. In regard to the Board's three price guidelines, the Québec Government has an equivalent first price test and, therefore, there is no need for application of the first price guideline at the federal level. The other two guidelines also should be abandoned. In addition, the Board should withdraw from certification, environmental assessments and detailed routing of international power lines as this area is already adequately covered by the provincial governments. The Act, therefore, should be amended to allow acceptance of provincial regulations in place of federal regulations.

The Ontario Ministry of Energy stated that decisions relating to the development and use of electricity resources in Canada should remain a provincial responsibility as defined in the Constitution of Canada. To the extent that surplus electrici-

ty exists over and above provincial needs, there should be a fair opportunity for interconnected utilities to have access to these surpluses. Any negotiated agreements should thus be based on terms and conditions relevant to Canadian utilities' requirements and domestic transactions should be encouraged in priority to exports. If exports are made, federal involvement would be required only to provide a framework to ensure conditions of fairness. In that regard, the province supports the continuation of the Board's current practice in respect of offers, ongoing interception rights and price tests. However, it opposed any mandatory wheeling of export power through provincial jurisdictions, prefering voluntary arrangements instead. It argued that section 90.1 of the Act was inappropriate and should be withdrawn. It also suggested a new definition for an international power line including a criterion that it begins no farther than one kilometre from the international boundary.

The Manitoba Interdepartmental Planning Board on behalf of the Government of Manitoba submitted that there is considerable overlap between Manitoba's routing and environmental impact assessment process in respect to power lines and that of the National Energy Board. There was fundamental overlap in the authority to approve a route and more specific overlap in the public involvement processes. Manitoba held the view that it would be more appropriate to leave these matters to provincial jurisdiction rather than to duplicate provincial processes. The province was open to further discussions with the Board and submitted that if current Board practices remain unchanged, then ways of reconciling these processes would have to be found to minimize public confusion while at the same time mutually respecting the provincial and federal interests.

The British Columbia Ministry of Energy, Mines and Petroleum Resources expressed reservations about the Board's current procedures for surplus determination. It suggested that, as an alternative, provincial utilities could prepare ten-year supply/demand and surplus forecasts and file this information with the Board. In addition, interconnected utilities would receive notice of surplus capability. This advance notification process would replace the offer of electric power for sale; this proposal was the same as B.C. Hydro's. The utility's forecast would be reviewed and approved by provincial authorities in advance of the notification process and the Board should accept the forecast results as evidence of surplus. Since 1980, B.C. has had legislation requiring provincial approval of the removal of energy resources from the province. There is, therefore, some overlap between the Ministry's energy removal certificate (ERC) procedures and those of the Board's. It suggested that the Board also accept the issuance of an ERC by the province as evidence of the existence of a surplus in B.C. The province also expressed reservations about the Board's first and second price guidelines and again recommended that the Board accept equivalent provincial procedures under the ERC. It also suggested that the third price guideline be eliminated. Overlap also exists between the province's Energy Project Certificate (EPC) procedures to authorize the construction of transmission lines of 500 kV or higher in B.C. and the Board's procedures. Therefore, in respect to the certification and detailed routing of international power lines, the Board should accept provincial decisions in these matters.

3 Associations and Public Interest Groups

The ***Consumers' Association of Canada*** stated that the Board must consider the economic and technical impacts of an export proposal on the regional economy of the applicant and on the neighbouring provinces. It also recommended that the Part VI Regulations be amended to require information to be filed on the benefits and impacts of export proposals on domestic rates and the impacts on provincial economies. It also felt that the Part VI Regulations relating to market information should be rigorously adhered to. With respect to exports from dedicated or pre-built facilities, the CAC stated that the reduction in domestic supply options represented by dedicated plants should be of concern to the NEB. It recommended that the Board satisfy itself that a meaningful comparison of alternative export packages had been made by the applicant prior to approval of any facilities development.

Energy Probe's position was that electricity should be treated like any other commodity and only regulated provincially. Federal regulation of electricity exports should take place only in limited circumstances, such as where export projects resulted in cross-boundary impacts or where projects were federally subsidized or sponsored. In these limited circumstances, federal regulation should be carried out by the appropriate government department such as the department of Indian and Northern Affairs or External Affairs, rather

than the NEB. The NEB's role should be restricted to that of an advisory body to the Federal Government on electricity matters. Energy Probe stated that the NEB should have a role in regulating any spare transmission capacity that may exist on provincial electricity grids which could be used by utilities not under the jurisdiction of the province or provinces in which such spare capacity exists. Energy Probe is of the opinion that expropriation of private property to allow export facilities to be built should not be viewed as something which is in the public interest if its purpose is only financial gain.

Judicial Action was concerned that electricity was being exported at too low a price with the result that the U.S. enjoyed a higher standard of living at the expense of the Canadian standard. Judicial Action was also concerned that this low-priced electricity was being used in the U.S. to increase production of armaments and, in fact, contributed to the likelihood of nuclear war. Judicial Action urged the NEB to continue regulating electricity exports and to do so in a manner which would preclude the export of electricity at a low price and would encourage utilities to concentrate on supplying domestic needs at minimum cost.

The ***Northwest Conservation Act Coalition*** said that there were significant conservation resources available to utilities in Canada (and the U.S.) and that these resources should be given first priority for export purposes. It supported the continuation of the NEB's surplus determination procedure on the grounds that such an independent review was particularly important to protect Canadian interests and would make a proposed export project more attractive to the U.S. purchaser. It suggested that the NEB require utilities to demonstrate that their export proposals were superior to alternatives, including alternatives under which surpluses would be obtained by reducing domestic demand through conservation resources. With respect to licence term, the NCAC said that the present limit of twenty-five years should not be extended and that contracts should be subject to review after about ten years. On the subject of dedicated plants, the NCAC stated that the exporting utility should be requested to demonstrate that the resource proposed for dedication had been selected as a result of a rational process involving examination of all reasonable alternatives.

The ***Peace Valley Environmental Association*** stated that, although its primary concern was to save the Peace Valley from future hydro-electric development, it would accept that such development could be permitted if it was clearly in the public interest. The Board should conduct an inquiry to develop procedures for determining and quantifying the extent of all environmental, economic and social costs related in any way to the export of electricity. The Board's first price guideline should be replaced by a more comprehensive and sensitive mechanism for determining whether or not export proposals were in the public interest. The PVEA also felt that the national power policy should be amended so that it does not explicitly encourage the development of large generating stations as compared to alternatives such as conservation. With respect to dedicated facilities the PVEA suggested that the public should be allowed to have meaningful input into determining the Board's approval procedures and the federal government should consider regulating the site selection, construction and compensation/mitigation programs related to these facilities.

The ***Sierra Club of Western Canada*** supported full public hearings as they give parties the opportunity to seriously question proponents' plans. It stated that it was not opposed to exports carried out for reasons of border accommodation, mutual aid, or to dispose of surplus energy resulting from varying operational and economic conditions. However, it stated that it was opposed to exports from prebuilt or dedicated facilities or exports stemming simply from economic or environmental considerations of the purchaser. The Sierra Club supported a strong enforcement of the first price guideline to insure that all costs, including environmental costs, are recovered by the export price. It also supported the Board's second price guideline but had reservations about the appropriateness of the third price guideline. It recommended that licence terms for most exports be limited to five years and that authority to require a utility to provide access for another only be used as a last resort.

La ***Société pour Vaincre la Pollution's*** position was that there should be no reduction of federal regulation of electricity exports. According to the SVP the provincial environmental assessment procedures, including the provincial public hearing process in the province of Québec, were inadequate and did not provide for the protection of the public interest of the citizens of Québec. It stated that the NEB should conduct comprehensive public hearings in Québec on all matters related to electricity exports including the social and environ-

mental impacts of phases 1 and 2 of theJames Bay hydro-electric development scheme.

Mr. Bell recommended that, for interruptible exports, no demonstration of surplus be required since, by their nature, these exports could be curtailed or terminated at any time. In addition, these types of exports should not be subject to the NEB's three price guidelines. In the case of firm exports, Mr. Bell suggested that the first two price guidelines be replaced by the requirement for a more general economic justification similar to that required for international power lines and a requirement to offer proposed exports to interconnected Canadian utilities under the same terms and conditions, including price. He stated that the third price guideline might not be appropriate if a free trade arrangement with the U.S. was negotiated. Mr. Bell stated that increasing the maximum licence term to thirty-five years would allow Canadian exporters to negotiate the best price possible for an export. He also recommended that the NEB withdraw from the environmental examination of export facilities as this was a major area of federal/provincial overlap.

Mrs. Joan Y. Peters, in a letter of comment, cautioned the Board to assess carefully the reasons behind decisions to reduce and simplify the federal regulatory process. She stated that the Board is the only protection or gate of appeal that Manitobans can use in controversial disputes over Manitoba Hydro policies.

Mr. Byrne M. Williams, in a letter of comment, stated that exports of electricity should not be permitted until it can be provided in all parts of Canada at the same price. He suggested national grids running east and west be constructed across Canada to provide electricity at the same price.

Mr. X's position was that electricity regulation should not hamper the development of new technology related to electrical transmission, nor should such regulation preclude the future use of this technology. Mr. X cited specific sections of the Board's Part VI Regulations which, in his view, should be amended to provide for the use of wireless transmission technology which he felt could become commercially viable in the future.

Appendix IV

National Energy Board Act - Procedures for determining the detailed-route of an international power line

Once the Board has issued a certificate of public convenience and necessity authorizing a company to construct and operate an international power line, that company is required by section 29 of the *National Energy Board Act* to prepare and submit to the Board a plan, profile and book of reference of the facility. The Act also requires the company to notify all owners of lands proposed to be acquired and to publish notices in local newspapers. Persons objecting to the detailed-route are given an opportunity to file written statements. If there are any *bona fide* objections to the detailed-route, the Board is required to hold a public hearing at which all interested parties are heard. Persons participating in public hearings may be reimbursed for reasonably incurred costs. A company may not commence construction of an international power line until after the plan, profile and book of reference has been approved by the Board, with or without a public hearing as the circumstances may dictate.

Part V of the Act sets out the procedures to be followed for the acquisition of lands required for the purpose of an international power line. A company is, first of all, required to notify all owners of land that their property may be required. The company and the owner will then attempt to enter into a land acquisition agreement in accordance with the provisions of subsection 74(2) of the Act. Where a company and an owner of land have not agreed on the amount of compensation payable under the Act for the acquisition of lands or for damages suffered as a result of the operations of the company or on any issue related to such compensation, the company or the landowner may resort to the negotiation and arbitration procedures under the Act. These provisions of the Act are administered by the Minister of Energy, Mines and Resources.

While compensation matters are being resolved, the company may wish to proceed with construction of the international power line. Section 75.26 of the Act provides that the Board may, on application by the company, if the Board considers it proper to do so, issue an order to the company granting it an immediate right to enter on any lands on such terms and conditions, if any, as the Board may specify. That right of entry order is deemed to vest in the company such right, title and interest in the lands in respect of which the order is granted as is specified in the order. Prior to issuance of a right of entry order, landowners are notified and advance compensation is offered.

Section 90.1 of the *National Energy Board Act* provides that certain provisions of the *NEB Act* shall apply to interprovincial power facilities designated pursuant to that section. Once such a line receives a certificate of public convenience and necessity pursuant to the *National Energy Board Act*, the provisions relating to the determination of the detailed-route, land acquisition and compensation as described above apply to that designated facility.